# The Dynamic Figure Art of Jabiluka:

## A study of ritual in early Australian rock art

Iain G. Johnston

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# Declaration of Candidate

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where reference is made in the text.

I.G. Johnston

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# Abstract

This thesis is an investigation of ritual practice in the Dynamic Figure rock art of Jabiluka in Mirarr Country, Australia. Painted across western Arnhem Land, Dynamic Figure art constitutes the earliest easily recognisable body of rock art in this region of northern Australia. Despite its antiquity, its most striking attributes are the extremely detailed depictions of human figures with a plethora of material culture, that are engaged in a range of narrative scenes. This thesis explores how the material culture, scenes and other attributes of Dynamic Figure art are acutely associated with ritual and the insights this rock art provides into past ritual behaviour. The highly detailed work of Dynamic Figure artists has enabled the identification of ritual indicators derived from archaeological and anthropological investigation of ritual practice. These ritual indicators provide insights into aspects of the esoteric and actual performative forms of ritual behaviour. These detailed depictions also provide further insights into people's lifeways, revealing evidence about society, gender, initiation and material culture during the period of Dynamic Figure art production. In this thesis, I demonstrate the value of rigorous analysis and investigation of one type of rock art from a defined study area, in contrast to previous studies in the region with broad spatial and temporal boundaries. This focused approach incorporates the multi-vocal sources available in northern Australia to consider inquiries not possible of broader studies. The Dynamic Figure art of Jabiluka demonstrates the significance of ritual places, headdresses and aspects of both continuity and discontinuity in art production in northern Australia and further highlights the significance of rock art to understand ritual practice and people's past lifeways.

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# Glossary

The definition of these terms was developed specifically for this study and some are not consistent with how these terms are more generally used in an archaeological discourse.

Terms and definitions used in the thesis relating to western Arnhem Land rock art

| | |
|---|---|
| Axe | A stone tool hafted (attached) to a wood handle. |
| Boomerang | A wooden implement used as a hunting projectile and as a percussive instrument. |
| Arm band | An object, generally of thin fibre cord, worn around the arms of human figures. |
| Brockman (Mount) | Rock massif in central Kakadu, see Djidbidjidbi. |
| Ceremony | Performance aspect of ritual practice, see ritual. |
| Clan | Patrilineal land holding group. |
| Club | A linear, stick like, object with one larger or *heavier* end. |
| Cluster | Group of rock art sites in close proximity, generally fewer than 50 meters away. |
| Deaf Adder creek | Major creek system in southern Kakadu and a tributary of the East Alligator River. |
| Digging stick | A linear, stick like, object. Problematically it is typically associated with women; digging is only one of its uses. |
| Dilly bag | A malleable fibre vessel with an opening for holding of objects. |
| Djidbidjidbi | King Brown Snake Dreaming, see Mount Brockman. |
| Djabiluka | Sacred rock pool in the Jabiluka valley, origin of the name Jabiluka. |
| Djang | Adjective which describes sacredness and ancestral connections, can also be used as noun. |
| Djawumbu - Madjawarrnja | Rock massif consisting of two formations and the survey area of this thesis. |
| Duwa | One of the two moieties of the Kakadu region. |
| Dynamic Figure art | Refers to all rock art produced during the 'Dynamic Figure period', inclusive of human figures, therianthropes, stencilling, printing and depictions of fauna. |
| Dynamic Figure style | The manner and form typical of Dynamic Figure human figures, but also present in some depictions of fauna. |
| Form | Manner in which a rock art motif is painted. |
| East Alligator River | Major river that separates Kakadu National Park and Arnhem Land. |
| Escarpment | Cliff face and edge of the Arnhem Land rock plateau. |
| Gunbalanya | Small settlement in Arnhem Land across the river from Kakadu National Park, it sits at base of Injalak Hill and was known as Oenpelli. |

| | |
|---|---|
| Gundjeihmi | Language spoken by the Mirarr and part of the Bininj Kunwok language family. |
| Hair adornments/ styles | The various forms and shapes that Dynamic Figure female human figure's heads were recorded in. |
| Headdresses | Material culture objects worn on the heads of Dynamic Figure human figures. |
| Hook stick | A stick with an acute angled protrusion at one end, likely a prototype spear thrower (see Lewis 1988). |
| Injalak Hill | Rock art complex at Gunbalanya. |
| Jabiluka | Area around the Djawumbu-Madjawarnnja massif, in this thesis refers to the Jabiluka Lease Hold area. |
| Language group | Non-patrilineal land owning group, see clan. |
| Kakadu | Kakadu National Park. |
| Lithic | A stone tool. |
| Magela Creek | Water course and tributary of the East Alligator River. |
| Malakunanja II | Rock art site, which should be referred to as Madjedbebe |
| Madjedbebe | Rock art and camp site in Jabiluka. |
| Material culture | Objects created by humans. |
| Mirarr | A Traditional Owner clan group of northern Kakadu, including Jabiluka |
| Motif | A Dynamic Figure human figure or a Dynamic Figure therianthrope (animal headed being). |
| Mountford Figures | A human figure style associated with the Red Lilly area, near the East Alligator River, see Jones 2017. |
| Madjinbardi | Outstation near Magela creek which used to be an abattoir, also known as Mudginberri. |
| Multi-vocal | Various sources available to researchers through which to investigate the past, e.g., anthropology, archaeology, ethnography, history etc. |
| Necklace | An object worn around the neck of human figures. |
| Ngarradj Warde Djobkeng | A rock art complex in the northern part of the study area. |
| Northern running figures | See Mountford figures. |
| Oenpelli | See Gunbalanya. |
| Outlier | Rock formations and massifs away from the escarpment. |
| Panel | Painting surfaces in a rock shelter. |
| Pubic skirt | An object worn around a human figure's waists. |
| Ritual | A complex religious activity consisting of certain attributes, see Chapter 1 and Chapter 4, |
| Round object | An unknown material culture object that is circular. |

| | |
|---|---|
| Scene | One or more Dynamic Figure motifs depicted in a coherent narrative composition. |
| Site | Rock shelter, boulder panel etc., see Chapter 5. |
| Spear | A long hunting projectile. |
| Spear thrower | An object that assists to throw a spear. |
| Stick | A linear material culture object. |
| Style | Manner in which rock art is painted, see Chapter 4. |
| Wellington Range | Rock formation in north west Arnhem Land. |
| Yam style | Rock art style typical in central Kakadu. |
| Yirridjdja | One of two moieties of the Kakadu region |

Unless stated all photographs and tracings are by the author.

Some figures have been removed due to copyright restrictions or intellectual property considerations.

# Chapter 1: Introduction


*Figure 1.1. Traced reproduction of scene I10046:73, a Dynamic Figure scene involving human figure motifs conducting an undetermined activity.*

## 1.1. Introduction

The human figure motifs in Figure 1.1 are part of a scene located at the southern end of the Djawumbu-Madjawarrnja massif, within a large rock shelter containing the masterpieces of many generations of artists. The shelter sits atop this small plateau surrounded by open grassland and numerous smaller shelters and alcoves densely painted with rock art. It has views in all directions including a vista of the massive biomass of the Kakadu flood plain, a marker of the richness of this Country today.[1] At this shelter, countless artists have painted compositions that detail their experiences and understanding of their world from the recent to the distant past. To the archaeologist familiar motifs stand out, the lever action rifle or the enormous snake, which may indicate recent changes in artists' lives, types of economic resources and hint at the significant relationship between rock art and the artists' cultural belief system which continue to this day.

According to archaeologists, the scene in Figure 1.1 is the earliest substantial and recognisable record of artists painting their cultural belief system, from a period in the past when the vista from this rock shelter would have been quite different (Johnston 2017; May et al. 2017a). The Aboriginal owners of this region know that ancestral spirits placed or painted themselves into the rock which can be still seen today (see Brandl 1988:165). The scene contains four elongated human figure motifs, one almost completely hidden by the fall of a massive boulder possibly thousands of years previous. The three remaining motifs are executed with elegant long lines with definition to indicate their musculature, typical of this rock art style. Each motif is wearing a necklace and is carrying a spear, but most striking are the large and intricate headdresses with subtle details of dashes and shading. The motifs are depicted undertaking an undetermined activity; two stretched out head to feet next to each other while the third is standing a short distance from them, the artist chose to paint numerous dashes emanating from their heads and necks possibly indicating the power and significance apparently associated with this undetermined activity. These motifs are part of the Dynamic Figure art of western Arnhem Land, the first clearly definable body of rock art in this part of northern Australia and the start of one of the most extraordinary rock art records in the world.

[1] Country is capitalised to reflect its usage in Aboriginal English and the significance of Country to Aboriginal people. Country is an active agent in Aboriginal peoples' world view and a place which they share a spiritual connection to; it is therefore a proper noun (see Rose 1996:7)

The rock art of western Arnhem Land in the Northern Territory of Australia is among the most remarkable tangible records of human connection to place found anywhere in the world (Chaloupka 1993a). The density and variety of rock art is a testament to the lifeways of the people of western Arnhem Land that stretches back into the deep past (Chaloupka 1993a). This thesis focuses upon a defined area and a single type of rock art found across western Arnhem Land - Dynamic Figure art. Chaloupka (1984a:24) offered a general description of Dynamic Figure art:

> This style consists of small drawings of human figures, anthropomorphs, animals and composite beings, predominately portrayed in animated action. In the depictions of running figures with their wide spread legs, the artist of this style translated the intensity of physical motion into pictorial dynamics.

The archaeological significance of Dynamic Figure art was observed by the first researcher to conduct detailed rock art surveys of the region (Brandl [1973],1988:169), and subsequent researchers have argued that they are among the earliest remaining instances of art production of the remarkable rock art chronology of western Arnhem Land.

> The Dynamic style appears to be central to the understanding of [the] Western Arnhem Land rock art chronology, as it is from this style onwards that some kind of cohesion and continuity of tradition can be perceived. (Haskovec 1992:72)

Research into Dynamic Figure art has primarily focused upon their placement in regional rock art chronologies, with limited discussion of what insights Dynamic Figure art can provide about the artists who produced it (Brandl 1988; Chaloupka 1977,1984a, 1984b,1988/89,1993a; Chippindale and Taçon 1993,1998; Haskovec 1992; Jelinek 1989; Johnston et al. 2017; Lewis 1988,1997,2015; Taçon and Chippindale 1994; Taçon and Brockwell 1995). However, some of the more recent research has focused upon, or briefly addressed, how Dynamic Figure art can inform us about this specific period in the past and the artists who painted these motifs (Chippindale et al. 2000; Johnston 2017; May et al. 2017a; Lewis 1988; Taçon and Chippindale 2001a). This thesis develops and continues this line of inquiry and explores what Dynamic Figure art

reveals about the artists who painted the rock shelters of western Arnhem Land and, specifically, the geographic focus for my research — Jabiluka.

This thesis draws upon data collected during the Mirarr Gunwarddebim (rock art) Project's survey of Jabiluka to analyse Dynamic Figure art. The Mirarr Gunwarddebim project was a collaboration between the Australian National University (ANU) and the Gundjeihmi Aboriginal Corporation (GAC), the representative body of the Mirarr people. The Mirarr are the Traditional Owners of Jabiluka and a large area of north-east Kakadu National Park and part of western Arnhem Land (Mirarr n.d.). This project surveyed a very significant area of Mirarr Country that they have not had autonomy over since the 1970s, the Jabiluka Lease Hold Area (commonly referred to as Jabiluka). Jabiluka and Ranger, the area south of Jabiluka which is also part of Mirarr Country, were designated uranium mineral leases in 1976, despite protests at the time by the senior Traditional Owner, Toby Gangali, and others (see Allen 1978:8(124); Chaloupka 1978; EPG 1997:11-12; Fox 1976,1977; Mirarr n.d). Ranger has operated as a mine since the 1980s and although Jabiluka has not been mined it has had infrastructure constructed: roads, monitoring stations and a tailings dam. The Mirarr and other Traditional Owners have opposed mining on their Country since its inception (see Fox 1977:9); and this thesis provides an archaeological understanding of the significance of Jabiluka and supports the Mirarr's belief that the potential loss of any rock art or places within Jabiluka should preclude mining of their Country.

### 1.2. Rock art as an archaeological source

Archaeology is the study of material culture to explore the past and archaeologists *often* use the scientific method to analyse objects and draw conclusions about how people lived. Most often this has involved excavating places where people lived and examining what people have left behind. The advantage of excavation, particularly before direct dating techniques were developed, is that often the deeper the artefact the older it is while artefacts on the surface are the most recently discarded. Therefore, an archaeologist can build a relative sequence of the excavated material, top to bottom, and examine changes in people's lives over time at a particular place (although it is often not this simple, see Harris 1989). However, the information contained within these sequences is limited if the artefacts excavated are a too selective proportion of the overall material culture of the people who discarded them; moreover, they are often discarded or broken, therefore neither complete nor prime examples of those artefacts.

Finally, depending upon the raw material of the object many artefacts are absent from the excavated record due to taphonomic disintegration. In the acidic deposits of the wet-dry tropics of northern Australia, this is often the case, where few sites have anything close to the plethora of material culture — especially those belonging to the organic fraction — contained within ethnographic museum collections. Studies of rock art in northern Australia have the opposite problem:

> The problem is that on the walls and ceilings we have lots of information from the past but few secure dates. The opposite is true of the deposits where we have sequences of generally reliable dates but very little information. (Taçon and Brockwell 1995:676)

May et al. (2017a) highlighted this dichotomy between the rock art and excavated records in northern Australia. Only one example of a stone tool has been recorded in Dynamic Figure art, and potentially three hafted axes (Johnston 2017), while numerous fibre and wooden artefacts including headdresses, belts, necklaces, boomerangs and spears have been recorded and are depicted in numerous informative scenes of activity. The excavated record at Madjedbebe (Malakunanja II), a site in the same study area, has many stone artefacts including flaked tools, cores, axes and grindstones yet no fibre or wooden objects (Clarkson 2015). At the same time, each excavated artefact is dated to a high level of accuracy and precision through numerous dating methods. On the contrary, the age of Dynamic Figure art is estimated through relative methods as to be likely older than ten thousand BP (see Section 3.3). The differences between the two archaeological records demonstrates that they are better suited to different lines of inquiry and investigation. I see this dichotomy as how people saw themselves and their world — rock art — and what they did in their world — excavation — and by combing both we are best placed to explore the past. In this context, rock art is considered a form of communication through visual media (Layton 1992:1); which Ross argued has three components: ‘the intentions of the maker, the visual form itself, and the potential message’ (Ross 2003:14; see also Conkey 1990:11). Therefore, rock art is best utilised in a northern Australian context to consider emic perspectives in studies of past cultural understandings, practices and ritual.

Recent investigation of ritual, this included, have drawn significantly from interdisciplinary research (see Whitely and Hays-Gilpin 2008); however, the earliest

methodological investigations by archaeologists of ritual often juxtaposed it with economic subsistence strategies. Researchers argued that the former was largely unknowable or 'odd' behaviour and it was the latter that was best explored through archaeological evidence (Boivin 2009:268; David 2011:482; Insoll 2004:1,6). However, the archaeological discipline underwent a distinct shift after the theoretical vigour of the 1980s and many researchers consider that ritual and economic subsistence strategies are intertwined and best explored together (Boivin 2009:268; Verhoven 2011:115). It had become clearer to archaeologists that people in the past, and the present, did not see their world as simply 'food collection activities' and 'ritual activities' (see Section 1.4, Section 4.4). However, if ritual is intertwined with other social and economic activities, defining it, in order to investigate it archaeologically, is difficult (e.g., Insoll 2004:10-12). Insoll (2004:8-9) further argued that ritual must be studied with religion, and yet no definition encapsulates the multifaceted nature of ritual or properly acknowledges that 'religious and social life are inseparable'. To this end, Insoll (2004:8-9) broadly defined ritual as the activities associated with religion, and religion as the mythology and understanding of those ritual activities, a complex an intertwined definition. This understanding of ritual, as a set of activities or practices, and religion, as the beliefs and understanding of those practices, is applied in this thesis. Verhoven (2011:112) suggested that is the 'practice approach' to ritual, which developed from the research of Bourdieu (1977); this approach aims to identify ritual practice from its attributes instead of attempting to define and describe all forms of ritual or understand its meaning (see Section 1.4). Meaning in this context being ritual's associated religion and religious understanding. A further distinction within this framework is that of ritual practice and ceremony – ceremony is defined as the formal performance part of ritual practice which has certain attributes, stylistic traits, participants and traditions. Following this manner, Turner, from his anthropological research with the Ndembu in Zambia, succinctly defined ritual as 'a stereotyped sequence of activities involving gestures, words, and objects, performed in a sequestered place, and designed to influence preternatural entities or forces on behalf of the actors' goals and interests' (Turner 1977:183). Within this definition is an acknowledgement of active participants, who imbue their actions with significance, place and stylistic forms. These attributes of ritual practice demonstrate that within an archaeological context, rock art is best placed to examine ritual as it remains in situ and archaeologist can know that an artist(s) purposefully created that image in that place. Moreover, rock art is imbued with style (see Section

4.2) and artists create and embed in their rock art messages and their emic understanding of their world.

Conkey (1985:305) argued that, of all types of material culture, rock art and portable art objects have the most potential for identifying ritual. To this end, researchers have argued that rock art from around the world is linked to ritual (e.g., Fuglestvedt 2010; Goldhahn 2008; Layton 2006; Vinnicombe 1976; Whitley 2006). However, not rock art is intrinsically linked with ritual (see Ross 2003), but Dynamic Figure art has specific features which facilitate an in-depth investigation of its relationship with ritual at its time of production. First, Dynamic Figure art is figurative, that is, a manner of art that is reminiscent of life: facilitating formal analysis and the interpretation of human figures, fauna and those aspects of the material culture for which we have a real reference (Taçon and Chippindale 1998:7-9). Second, the ubiquity and primacy of headdresses above all other material culture suggests a ritual context (Berndt 1951a:170; Johnston 2017, Welch 1997; see Section 3.12). In my investigation of the use of headdresses within Dynamic Figure scenes (Johnston 2017), I argued that it is often headdresses that specifically indicate the role/s of participants in ritual performances and the relationships between the human figures painted within scenes. Finally, Dynamic Figures are often engaged in scenes, that is the human figure motif(s) are depicted performing an activity, which are embedded with cultural and contextual information. Human figure rock art scenes occur across the world (e.g., Clottes 2011; Duhard 1993; Dawson 1994; Engelstad, 2001; Fuentes 2013; Helskog 1988; Layton 2001; Pales 1969), but few places have rock art traditions with clears indications of narrative purpose (see Section 5.4), similar antiquity and as many detailed and varied scenes as the Dynamic Figure art of western Arnhem Land, making this an important study (May et al. 2017a, see Chapter 4).

Many of the recent thesis's concerning rock art in northern Australia have focused upon better understanding sequential chronologies, or the order in which rock art was painted, of their study areas (e.g., Harper 2016; Hayward 2016; Jones 2017; Mulvaney 2015; Travers 2015, see Chapter 3). A focus of these research projects was to re-examine the second phase of proposed regional rock art chronologies, those developed by researchers post the 1970s and into the 1990s (e.g., Chaloupka 1993; Chippindale and Taçon 1998; Lewis 1988; Lorblanchet, 1992; Walsh 1994). In turn, these second phase chronologies were re-examinations of very broad chronologies by earlier researchers

(e.g., Brandl 1988[1973]; McCarthy 1958; Mountford 1956). However, these studies also drew valuable conclusions about the people who created rock art in the past by examining human figures in the art, often drawing upon statistical analysis. For example, Travers (2015) used multiple correspondence analysis (MCA) to demonstrate the direct stylistic continuity between depictions of human figures in the rock art styles of the north west Kimberly. Similarly, Hayward (2016) developed a database of human figures to examined how certain types of material culture, spear throwers, were used to communicate information to observers (see also Hayward 2017a). Hammond (2017) investigated just one style of rock art from western Arnhem Land, the Yam style (see Chapter 3), and demonstrated that style's geographic distribution. She also used that distribution, environmental data and other sources to better articulate the Yam style's temporal placement in the chronology (Hammond 2017:101-102). Other studies have focused upon certain material culture objects in the art. For example, Miller (2016) examined the diversity of bags and baskets, across the complete chronology recorded in Mirarr Country, and explored how these objects reveal information about individual and group identity. The typology she developed was able to show that while most baskets were not specifically related to one sex, certain baskets were exclusively depicted with male or female figures (Miller 2016:142-144).

Methodologically, this thesis draws upon this body of research as I have also created a specific rock art database to explore my research questions, a method that has its genesis in Australia with the work of Maynard (1976) (see Chapter 5). I have also employed statistical analysis to investigate rock art data. Fine-grained statistical analysis, although popular in excavated archaeology, has been exploited less frequently in studies of Australia rock art and some early researchers actively shunned it (see Smith 2012). Statistical analysis of rock art has become more common since the 1990s as it has been employed to demonstrate the relationships between various artistic attributes (form, colour size etc.) (e.g., Franklin 2004:33; McDonald 2008[1994]; Taçon 1989a; Tacon et al 1996; Travers 2015; Wilson 1998, 2004). However, it is still underutilised, and this thesis draws upon recent studies that have employed statistical analysis to successfully investigate rock art and the past (e.g., Travers 2015; Tasire and Davidson. 2015; see Chapter 5).

Where this thesis differs from other studies in this region (cf. Hammond 2017), is that it is focuses upon just one style of rock art from one temporal period to provide a more in-

depth analysis of how a body of rock art can inform us about the past. As Chaloupka (1993a:106) argued, Dynamic Figures are 'the most vital and exciting paintings…' as they are '…embodying the artists' existential experiences and describing the world around them and their relationships with other'. The significance of Dynamic Figure scenes cannot be overstated as the cultural activities depicted provide an opportunity to explore people's ritual understanding of their world, including relationships between sexes, initiated and uninitiated and people and therianthropes (animal headed beings). This line of inquiry, even with its limitations (see Section 1.7), enables the greatest opportunity to understand aspects of the lives of the Dynamic Figure artists.

### 1.3. Research questions

This thesis explores what Dynamic Figure art reveals about the artists who painted it and their lifeways at its time of production. The key research question for my study is:

- Does Dynamic Figure rock art provide insights into past ritual behaviours in western Arnhem Land?

To answer this question subsidiary questions have been developed from the literature review, methodology as well as other studies and discussions of ritual (e.g., Bell 1992,2009; David 2011; Insoll 2009,2011; Rappaport 1999; Ross 2003; Ross and Davidson 2009; Verhoven 2011; Whitely and Hays-Gilpin 2008; Wright et al. 2016b). These subsidiary questions are:

- Does the placement of Dynamic Figure rock art indicate the location of areas associated with ritual within a wider cultural landscape?
- Are there ritual indicators associated with individual Dynamic Figure motifs?
- Do Dynamic Figure narrative scenes provide evidence for actual (as opposed to imagined) ritual activities and is this evidence supported by historical ethnographic evidence?

### 1.4. Theoretical framework to investigate ritual practice

In this thesis, I argue that Dynamic Figure art is indicative of ritual practice and that ritual behaviours have influenced many aspects of Dynamic Figure art production. My results demonstrate the significant influence of ritual practice upon the placement of Dynamic Figure art in the landscape, its associated material culture and the subject matter of the narrative scenes in which it is depicted. The methodology and theoretical

framework I employ supports this argument and is based in archaeology; however, multidisciplinary sources, anthropology and ethnography, are called upon to support the discussion.

The approach and understanding of ritual employed in this thesis, the ritual practice approach, is developed from a structuralist discourse which supports this multidisciplinary methodology but also acknowledges its limitation (Bell 1997,2009; Boivin 2009; Rappaport 1999; Ross 2003; Ross and Davidson 2009; Verhoven 2011). Structuralist investigations of ritual, within archaeology, have their roots in the anthropology of Levi-Strauss (1968; see also Layton 1997:87) and their early application in the rock art research of Leroi-Gourhan (1968). Structuralism preferences the patterned relationships between artefacts and artefact types oppose to the information gleaned from specific artefacts; for archaeologists, the examination of the structured relationships between artefacts enables an understanding of the past without historical or ethnographic (informed) sources (Bovin 2009:270). Moreover, Rappaport (1999) argued that it is the underlying structure of ritual that allows for its investigation by non-informed researchers. For instance, Hodder (1982a:7) argued that 'material culture can be examined as a structured set of differences' and used this approached when investigating ritual in a European context (see also Shanks and Tilley 1987). However, as Bovin (2009) argued there are issues with this approached, also recognised by Hodder (1992) and Tilly (1999); Bovin (2009:272-3) argued that structuralist approaches neglect the significance of the artefact itself and presupposes an arbitrary relationship between artefacts and their meaning. Therefore, archaeological investigations of ritual that preference structured relationships must also be contextualised those relationships within a culture and place. In doing so, investigation of ritual informed by the structuralist discourse have provided insightful investigations of the past material culture (Verhoven 2011:112-116; e.g., Ross 2003).

The ritual practice approach, described in Section 1.2, is informed by, and very much part of, the structuralist approach to investigate ritual. Bell (1997:138-69,2009:16) and Rappaport (1999), whom could be described as developing and employing the 'ritual practice approach', observed the structure and recurring features common to ritual practice around the world and used these to identify ritual and develop working definitions (see Chapter 4). Rappaport's (1999:24) definition of ritual, 'the performance of more or less invariant sequences of formal acts and utterances not entirely encoded

by the performers', has similarities with Turner's (1977:183). The reason that these two definitions are similar is that ritual practice has a set of attributes universally present across time and space (Rappaport 1999:24; for Australian examples see Berndt 1951a:173,1951b; Morphy 1991,1999; Meggitt 1966b; Stanner 1963; Taylor 1996; Warner 1958). Either definition could be used in this study, as the primary focus of this thesis is to investigate the presence of ritual practice within Dynamic Figure rock art not to define what is and isn't ritual or what ritual means or is about. In this way, I follow Ross (2003), who developed a methodology for identifying ritual practice within rock art assemblages within an Australian context.

Ross (2003) examined the relationship between ritual and a central Australian rock art assemblage. She employed the ritual practice approach from this structuralist discourse, although she doesn't refer to the ritual practice approach, and demonstrated that most but not all rock art in this region had a relationship to ritual (Ross 2003:1). This thesis follows aspects of the methodology Ross developed and her theoretical framework (see Chapter 4). Ross (2003) drew from Conkey (1980, 1985) who examined the relationship between ritual and aggregation in Lower Magdalenian sites of Europe. Conkey (1980:610,612 cited in Ross 2003:5) argued that distinctions could be made between larger ritual aggregation sites and smaller sites used by fewer people for economic subsistence strategies through the observation of 'greater diversity of design elements' in the art. This highlights how ritual studies of material culture and rock art can be used to understand peoples' past lifeways. I chose to draw from Ross's methodology of ritual and rock art because it was developed for an Australian context and is well placed to examine Dynamic Figure art.

Some studies, which concerned Dynamic Figure art, have also drawn from other European studies to examine peoples' past lifeways. For example, Lewis (1988:87) drew upon Gamble (1982,1983), who argued for an inverse relationship between environmental resources and social boundaries. Gamble (1982:99) argued that poorer environmental conditions precipitated larger social boundaries and stronger alliance marking through art. Lewis (1988:101-102) argued that between the Pleistocene and Holocene, the rising sea level reduced the liveable area in Arnhem Land, while also increasing the economic resources, and people responded by marking new smaller regional social boundaries. Unlike Lewis (1988) who compared rock art styles with one another over a wide area, this research focuses upon a defined area and a single type of

rock art to more comprehensively examine the information embedded in Dynamic Figure art and what insights it contains.

It is the primary aim of this research to ascertain the presence of ritual practice in Dynamic Figure art and explore what Dynamic Figure art reveals about the artists who painted it and their lifeways at its time of production. This thesis will provide among the most detailed discussions of early rock art and ritual practice in Arnhem Land and Australia. The formal archaeological methodology also provides etic chronological conclusions about Dynamic Figure art production, that complements previous rock art studies of western Arnhem Land (see Chapter 3). Broadly, this thesis explores how ritual and Dynamic Figure rock art informs us about artists and their lifeways at the time of its production.

### 1.5. Employing ethnography to investigate ritual and the past

The theoretical framework adopted for this study is enhanced by using ethnographic sources; despite the widely-accepted limitations of ethnographic analogy in studies of the past. As Insoll (2009:294) argued in relation to studies of ritual, '…there is an obvious requirement for an anthropologically informed approach that integrates all available sources of evidence, archaeology, anthropology, ethnography, and historical ethnographic'. The use of ethnographic analogy within an Australian archaeological context has been widely debated, and even specifically within rock art studies (e.g., Morwood and Hobbs 1988). Barker succinctly summarises the reluctance by some archaeologists to use ethnographic sources:

> The issue centres around the perceived dichotomy between, on the one hand, a western science (archaeology) and, on the other, Indigenous knowledge of the past (oral traditions mediated by Indigenous ontologies). (Barker 2007:73)

The chief concern is that peoples' understanding of culture, artefacts and their associated epistemology change over time; therefore, can one use current or recent understandings of artefacts to interpret the distances past? However, within the Australian context, Barker (2007:73) also argued that interpretations through ethnographic analogies are less concerned with 'notions of authenticity or accuracy' but how they can be 'applied scientifically'.

In this study, the scientific justification for the use of ethnographic analogy rest upon the historical connection of ethnographic sources from northern Australia and the underlying structure of ritual. Various studies of north Australian rock art have employed interpretations derived from ethnographic sources to understand archaeological data (e.g., David 2011:484; Domingo Sanz 2011; Elkin 1952; Johnston 2017; Macintosh 1977; May and Domingo Sanz 2010; May et al. 2017a; Smith et al. 2016; Taçon 1988:15,1989a,2001:115; Taçon and Chippindale 1994,2001a); underpinning these studies, as is typical in Australia, is the historical links between those ethnographic sources and the past (see Murray 1988). These studies have relied upon recent or contemporary interpretations of rock art by people and applied those via considered approaches to older rock art, sometimes painted in the distant past. Ethnographic studies of material culture and rock art slightly differ, as they aim to link ethnographic museum collections and contemporary practices with comparable depiction in the rock art record (e.g., Hayward 2016a,2016b; May 2009; Miller 2016; Peterson et al. 2008; Welch 1996,1997,2012). Each type of study relies upon an assumption of continuity from the past into the present but crucially researchers are not seeking to directly interpret and understand rock art from the past but use ethnographic sources to compliment other strands of evidence (see Chippindale and Taçon 1998, Chapter 4).

In this thesis, I employ ethnographic sources via informed methods to expand the discourse of ritual practice in Dynamic Figure art. In this context, informed refers to an inclusive multi-disciplinary approach, bound by theoretical frameworks and methods, and developed from specific research of rock art in northern Australia (see above, Chapter 4). Fundamentally, ethnographic analogy is not used in this thesis to comprehend a specific meaning from the rock art but to provide information relevant to the structure of ritual (see also Johnston 2017; Ross 2003). Analogy is used to consider what people may depict not why they depicted certain motifs or what a specific motif ‘means’. The validity of ethnographic analogy for this purpose is based upon the presence of the underlying structure of ritual (Bell 1992,2009; Rappaport 1999; Ross 2003; Ross and Davidson 2009:309; Turner 1977, see Chapter 4) and specifically these ritual structures in northern Australia (see Berndt 1951:173; Elkin 1979; Morphy 1991; Taylor 1996). Drawing from ethnographic accounts of recent rituals and ritual performances (ceremonies) provided a valuable comparison to better investigate the association between Dynamic Figure art and ritual. Early observations by researchers

(e.g., Brandl 1988:172) and some studies of Dynamic Figure art (e.g., Chippindale et al. 2000; Taçon and Chippindale 2001a) have already noted that Dynamic Figures maybe associated with ritual. Furthermore, the dominance of headdresses above all other material culture types (see Johnston 2017, May et al. 2017a, Chapter 7), associates Dynamic Figure art with ritual as headdresses are made for ritual performance in northern Australia (e.g., Berndt 1951a:170; Welch 1996,1997). Finally, investigations of Aboriginal cultures in contemporary northern Australia have shown that art is inseparably linked to ritual behaviour (see Berndt and Berndt 1977; Morphy 1991:101,115; Taylor 1996). Archaeological studies of ritual that employ ethnographic analogy in this way can have broader applications beyond a specific time and place, and it is density and time depth of the Australian rock art record that is valuable for comparative studies in the future (e.g. May et al. 2017a; Ross 2003).

### 1.6. Study area

As mentioned previously, the study area for my research is Jabiluka in western Arnhem Land. Jabiluka is in the 'Top End' of the Northern Territory, located about 220 kilometres from Darwin and surrounded by Kakadu National Park (Kakadu). According to its UNESCO world heritage listing:

> Kakadu National Park is a living cultural landscape with exceptional natural and cultural values. Kakadu has been home to Aboriginal people for more than 50,000 years, and many of the park's extensive rock art sites date back thousands of years. Kakadu's rock art provides a window into human civilisation in the days before the last ice age. Detailed paintings reveal insights into hunting and gathering practices, social structure and ritual ceremonies of Indigenous societies from the Pleistocene Epoch until the present. (UNESCO n.d.)

Also noted previously, Jabiluka is a mineral lease, despite being within the geographic bounds of Kakadu, and certainly containing the attributes of the UNESCO listing. A further enigma of the Jabiluka and Kakadu narrative is that the oldest dated archaeological site Madjedbebe (formally Malakunanja II), which provides the 'more than 50,000 years' of occupation is within the bounds of Jabiluka and not within Kakadu National Park (Clarkson 2015; Roberts and Jones 1994). Although, further

south in Kakadu, other sites with similar ages have been excavated (Roberts and Jones 1994).

The Jabiluka Mineral Lease is approximately 73 km² (Mirarr n.d.). The major rock formation within Jabiluka is the Djawumbu-Madjawarrnja massif which is approximately 5 × 2.7 km including the outlying rock formations and contains many hundreds of rock shelters of which more than 500 have instances of rock art production (May et al in 2017a). Some shelters are tens of metres long, have many panels and are densely saturated with rock art, while others are only large enough for one person and contain a single motif. Figure 1.2 is a map of Kakadu National Park showing Jabiluka and Ranger Mineral Leases in relation to the greater Arnhem Land escarpment.


*Figure 1.2. Map showing the Jabiluka and Ranger Lease Hold Areas (in red) and the Traditional Owners (identified by Language Name) of the Alligator Rivers area (Source: CartoGIS CAP).*

Yvonne Margarula is the Senior Traditional Owner of Jabiluka and a leader of the Mirarr, a role given to her by her father, Toby Gangali (Mirarr n.d.). Keen (1980:147) defined Mirarr Country as covering, 'the upper reaches of the Magela Creek, between Leichhardt billabong in the north and Mount Brockman and Whistleduck dreaming in the south, 'Urralugoorwa' waterhole in the west and the escarpment in the east.'

The Mirarr Gunwarddebim project has been documenting rock art in Jabiluka since 2011 (see Hayward 2016a, Hayward 2016b,2017a;2017b; Hayward et al. 2018; Johnston 2017, Johnston et al. 2017; May et al. in 2017a,2017b; Miller 2016; Wright et al. 2014,2016a). The project aims to document, study and promote the rock art sites in Mirarr Country — with an initial focus on Jabiluka (see May et al. 2017a). Many rock art surveys and studies have been conducted in Kakadu (see May et al. 2015:37-41), however, the Mirarr Gunwarddebim project's systematic method is the most thorough and detailed survey to date (see Chapter 5). This systematic survey method has and will continue to produce research that better interrogates questions about rock art and its significance for understanding the lifeways of past people living at Jabiluka and beyond. The project has also produced a database management tool for the Mirarr to manage and look after their rock art in the present and for future generations.

### 1.7. Limitations

Every effort has been made to address the limitations of this study; however, it is appropriate to acknowledge those inherent to this research. A limitation of the theoretical framework employed in this thesis is that it focuses upon identifying ritual at the expense of exploring its implications or defining it. This is the key issue with the structuralist 'ritual practice approach', as noted in Section 1.2. Bell (2009:16-17) in her discussion of the structuralist approach to ritual argued that it can be used to effectively identify ritual from a data source but is limiting beyond this identification. Within this thesis, I have mitigated this limitation by applying a multidisciplinary approach and employing ethnographic and anthropological sources. As noted, these sources are not used to explicitly interpret rock art, but to consider how ritual and specifically ritual practice indicators, may be manifested within rock art. I acknowledge that there are widely accepted limitations of ethnographic analogy but through appropriate methods and in regions with established continuing cultural traditions, like Arnhem Land, analogy can be used to discuss the past effectively (see Chapter 4; Taçon 1988:15,1989a,1989b, 2001:115).

To further ameliorate the ritual practice framework of this thesis, I develop an aspect of Ross's (2003) methodology and consider the degree of significance of her ritual indicators as applied to Dynamic Figure art. I will argue that the degree of significance of specific ritual indicators in relation to the broad collection of ritual indicators can inform us about peoples' lifeways in the past. In the second discussion chapter (Chapter 10), I focus specifically upon certain ritual indicators most prominent within Dynamic Figure art and what they reveal about ritual practice within Dynamic Figure art production and people's lifeways. This in-depth analysis is possible as this thesis focuses upon one type of rock art and in one specific place; instead of following past studies of Arnhem Land rock art which focused upon sequences and broad areas. In this way, the limiting geographical study area of Jabiluka is also mitigated by having confidence in the data set, which stems from the controlled systematic survey method adopted for Jabiluka by the Mirarr Gunwarddebim project.

Chaloupka posited that overtime Arnhem Land rock art research would make this transition:

> It is by identifying individual styles and by arranging them in chronological sequence that a meaningful division in a body of art can be achieved, and it is only then that other forms of analysis can be used. (Chaloupka 1984b:iii)

This thesis typifies this transition, which I believe began in Arnhem Land with Taçon (1989a) and continued sporadically. I have applied a specific theoretical framework and statistical analysis to focus upon how Dynamic Figure art can inform us about ritual practice and peoples' lifeways in the past.

### 1.8. Thesis outline

This thesis has three sections: Section 1 (Aims, Framework and Methodology); Section 2 (Results - Dynamic Places, Motifs and Scenes) and Section 3 (Discussion and Conclusion). The individual chapters are:

| | | |
|---|---|---|
| **Chapter 2** | **Background to study area** | This chapter introduces the Mirarr Traditional Owners of Jabiluka. It also details previous excavations and non-rock art related research relevant to this thesis. |
| **Chapter 3** | **Studying Dynamic Figure Art** | This chapter is a review of the literature pertaining to Dynamic Figure rock art. It considers different methods and conclusions drawn about this art and how my research questions were developed. |
| **Chapter 4** | **Theoretical framework** | This chapter consists of three sections and explains the framework and aspects of the methodology of this thesis.<br>• Information exchange theory and rock art as communication.<br>• Studies of ritual, ritual pracitce and ritual in rock art.<br>• Ethnography and ethnographic analogy in rock art research. |
| **Chapter 5** | **Methodology** | This chapter details the Mirarr Gunwarddebim survey method and the recording method employed to develop the Dynamic Figure data set. The final part of this chapter explains the selection of attributes for analysis and analytical methods used. |
| **Chapter 6** | **Dynamic Places** | This chapter contains results concerning the placement of Dynamic Figure art in the Jabiluka landscape. |
| **Chapter 7** | **Dynamic Motifs** | This chapter contains results relating to Dynamic Figure motifs. |
| **Chapter 8** | **Dynamic Scenes** | This chapter contains results relating to Dynamic Figure scenes. |
| **Chapter 9** | **Ritual indicators in Dynamic Figure art** | This chapter discusses the presence of each of the ritual indicators outlined in Chapter 4 within Dynamic Figure art. |
| **Chapter 10** | **Ritual during the Dynamic Figure period** | This chapter discusses further insights into ritual practice and Dynamic Figure art at its time of production. |
| **Chapter 11** | **Conclusion** | This chapter summarise the key findings and conclusion of this thesis and presents the status of Dynamic Figure art research. |

### 1.9. Summary

This thesis explores the relationship between ritual practice and Dynamic Figure art. It is my hypothesis that Dynamic Figure art has a significant relationship with ritual and by demonstrating and discussing this relationship I will be able to further our understanding of rock art production and peoples' lifeways. To explore this relationship, I employ a ritual practice or structuralist theoretical approach, and use methods that focus upon identifying ritual through specific universal indicators, instead of ascribing or interpreting meaning(s) of rock art or ritual. I support this argument by employing appropriate ethnographic and anthropological sources. Unlike previous studies of Arnhem Land rock art, in this thesis I focus upon a defined area and a single type of rock art to better explore and investigate the insights Dynamic Figure art contains for understanding the past. The next chapter is a review of archaeological research conducted in Jabiluka and the Arnhem Land region pertinent to this research.

# Section 1 - Aims, Framework and Methodology

# Chapter 2: Background to the study area

> *But there is a Djang (scared place) there [Jabiluka]. They're [the mining company] going to disturb it and make it wrong. They've already made wrong.*
>
> Yvonne Margarula (2013)

## 2.1. Introduction

Arnhem Land is an Aboriginal Reserve in the north east of the Northern Territory of Australia. It is roughly an 800km peninsular bounded by the Arafura Sea in the north, the Gulf of Carpentaria in the east and with desert and sparse wood lands to the south (Meehan 1982:10). Its western border is the East Alligator River and Kakadu, within which Jabiluka is located, a small but significant place within the western Arnhem Land landscape. Jabiluka is contained within the geographical bounds of Kakadu although it is not part of the national park (see Chapter 1). Kakadu is one of only four places in Australia that has UNESCO World Heritage Listing for both its environmental and cultural heritage values (UNESCO n.d.). Integral to its listing is the continuing connections that *Bininj* — the term used by Aboriginal people of the area to describe themselves — have to their Country and especially their rock art (UNESCO n.d.). The Mirarr, the Traditional Owners of Jabiluka, are one of the Aboriginal clan groups who maintain connections to their rock art and Country through ongoing cultural practices. In this chapter, I will familiarise the reader with the Mirarr's connection to Jabiluka and briefly discuss their ongoing fight to have legal autonomy of Jabiluka. I outline the geological, environmental and archaeological context of Jabiluka and pertinent previous research conducted in the study area. This context provides a complementary archaeological discussion to the review of the literature concerning Dynamic Figure art in the next chapter.

## 2.2. The Mirarr Clan and Mirarr Country

The Mirarr clan are one of several clan groups whose Country is now within the boundaries of Kakadu and western Arnhem Land. The main language they speak is Gundjeihmi (Kundjeyhmi), part of the *Bininj Gunwok* family of languages, and like

many Indigenous people in northern Australia they speak many languages, including Gunwinggu (Kunwinjku) and English (Mirarr n.d.; Evans 2003). The Aboriginal people of Arnhem Land maintain their connections to Country through cultural practices and beliefs that have been passed on by their ancestors (e.g., Chaloupka 1993a). These practices and beliefs explain who must look after certain places, how to look after those places and how to maintain them for future decedents. As Traditional Owners of Jabiluka, the Mirarr have cultural obligations and responsibility to care for that Country.

> The Mirarr are the Traditional Aboriginal (*Bininj*) Owners of much of the north-east of Kakadu National Park and parts of Western Arnhem Land. There are no strict lines or borders between Mirarr Country and the estates of neighbouring Aboriginal clans. (Mirarr n.d.)

Yvonne Margarula is the current Senior Traditional Owner for Mirarr Country, a responsibility given to her by her father, Toby Gangali (Mirarr n.d.). During his life, Toby worked with various rock art researchers and explained to them the significance of the places and rock art of his Country, these researchers included Brandl (AIATSIS MS 1348); Chaloupka (1978, AIATSIS CHALOUPKA.G02.BW) and Taçon (1989).

The ownership and management of Mirarr Country operates and is transferred through a totemic kinship system; a social and religious organisational system that is observed across Arnhem Land and Australia and which can have regional and even language group variations (Berndt and Berndt 1977:52-59; Elkin 1979:90). For Aboriginal Australians, a person's kinship group is larger than their immediate family and is often described as a 'local decent group'. A local decent group broadly comprises all the people who live and have a religious connection to a defined area of Country, those people are all considered kin (Berndt and Berndt 1977:40). Elkin (1979:84) argued that an Aboriginal person's kinship network includes all those people in their community and neighbouring communities, '…everyone with whom a person comes in contact is regarded as related to him, and the kind of relationship must be ascertained so that the two persons concerned will know what their mutual behaviours should be' (Elkin (1979:84-85). This form of kinship network connects the *Bininj* to their places and the people around them. Furthermore, all people, things and places are ascribed totems, a person may inherit their totem from their father or mother or from where they were born (Berndt and Berndt 1977:42). Totems and totemic affiliations are part of the religious organisational system of Aboriginal Australians and are intertwined with kinship. A

person's totem connects them to ancestors, myths and rituals, which have this same totem (Berndt and Berndt 1977:42). Together, a person's totem and their kinship dictates which Country they belong to, how they should relate to the people around them and what roles they have in ritual practice and life.

In the specific totemic kinship system of the Kakadu area of western Arnhem Land, a person's totem can be inherited from patrilineal, matrilineal or ambilineal kin depending upon their local decent group (Keen 1980:67,73). In Gundjeihmi, certain patrilineal land owning decent groups are called Gunmugurgur (clans), such as the Mirarr, (Keen 1980:71-72). Matrilineal or ambilineal kin decent groups are variously described but most often called language groups. A Gunmugurgur can be made up of many patrilineal lineages all whom share a connected clan name (company); for instance, the Madjinbardi Mirarr and Red Lily lagoon Mirarr both share the Mirarr company name (Keen 1980:71). Different members of a Gunmugurgur speak for their own places and their associated mythology and stories; however, they also have obligations to their fellow clan members (Keen 1980:73-75). Where they speak for is dictated by kinship and also by their totem.

The western Arnhem Land totemic kinship system has a moiety (half) division, so all things of the world have one of two totems, Duwa or Yirridja. All things within the '…social, physical and spiritual universe…' are classified and belong to either the Duwa or Yirridja moieties, the Mirarr are Yirridja (Keen 1980:88). As noted, a person's totem has implications for group dynamics, as well as obligations to Country. For instance, places belong and are the responsibility of either totem, each animal and plant are classified as either Duwa or Yirridja and obligations to perform particular rituals and know and pass on particular stories belong to each totem. For an individual in a Gunmugurgur, their totem is inherited through patrilineal decent, so each Gunmugurgur is either Duwa or Yirridja. The interconnectedness of this kinship system is increased as a Yirridja person should marry a Duwa person – a mechanism that further connects the Mirarr to the people and places around them as that person's mother will be of the Duwa moiety and connected to different places and stories.

The Mirarr's totemic kinship system is just one variation practiced by some of the Gunmugurgur of the Kakadu area of western Arnhem Land. In the region, other clans and language groups have their own variations of totemic kinship systems, but this social and religious system connects all the people of Arnhem Land together (Elkin

1979:84). For more focused investigations of traditional totemic kinship systems see, for example, Berndt (1955), Hiatt (1965), or Myres (1991).

A key aspect of the totemic kinship system described above is the connection and obligations a person has to their Country. To adequately encapsulate the connection the Mirarr, and all *Bininj*, have with their Country and their rock art is very difficult and well beyond the scope of this thesis. However, I have compiled a demonstrative account from Layton and Chaloupka from their work with Toby Gangali during the South Alligator Stage Two Land Claims which provides some insight into the Mirarr's connection to Jabiluka and the role of rock art in manifesting this relationship. As a young man (c. 1930), Toby painted a white crocodile on a small but prominent mushroom shaped rock at the southern end of the Djawumbu-Madjawarrnja massif, called Djalalkurdubi (Layton 1992:22; Figure 2.l Figure 2.2 Figure 2.3). Between that time and 1978, when Chaloupka accompanied Toby to this site, Toby had taken his father's remains all the way from Point Stuart Station and placed them on a ledge at this site, because of its significance to Toby and the relationship he and his father had with their Country (Chaloupka 1978, CHALOUPKA.G02.BW). Moreover, when Toby was absent from his Country, he asked Peter Balmanidbal to look after it for him, and as part of this obligation Peter also painted a panel at this site (Layton 1992:22; Figure 2.4). It is also possible, that this site was painted by an older rock painter Najombolmi, who was also Toby's friend and teacher (Figure 2.5; CHALOUPKA.G02.BW; see also Haskovec and Sullivan 1989; Taçon and Chippindale 2001b). This account demonstrates the significant role of rock art and places for maintaining intergenerational relationships and it attests to the connection and responsibilities *Bininj* have with their Country. Overall, it demonstrates that Jabiluka is particularly important for the Mirarr and that the responsibility to look after the places within it has been passed on for generations.


*Figure 2.1. Reproduction of Plate 23 from Chaloupka (1978), showing Toby Gangali and Nipper Kapirigi at Djalalkurdubi, where Toby painted as a young man.*


*Figure 2.2. Reproduction of Plate 27 from Chaloupka (1978), showing Toby Gangali at Djalalkurdubi pointing at the crocodile he painted as a young man.*

*Figure 2.3. Painting of a crocodile by Toby Gangali (c. 1930) at Djalalkurdubi, on the southern end of the Djawumbu-Madjawarrnja massif.*

*Figure 2.4. Painting of a male human figure motif, macropod and material culture by Peter Balmanidbal (before 1978) at Djalalkurdubi, on the southern end of the Djawumbu-Madjawarrnja massif.*

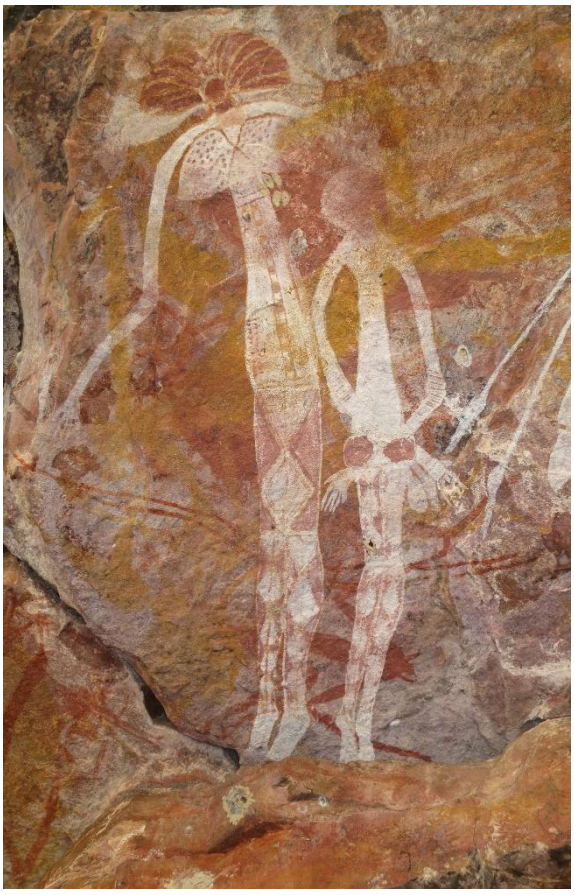

*Figure 2.5. Painting of male and female human figure motifs by Najombolmi (before c.1964) at Djalalkurdubi, on the southern end of the Djawumbu-Madjawarrnja massif.*

As noted in the introduction, Mirarr Country spans from the Magela Creek to the Urralugoorwa waterhole and from Leichhardt billabong to Djidbidjidbi (Mount Brockman) (Keen 1980:147). Although geographically accurate, this description does not account for the Mirarr's or *Bininj's* understanding of mutual obligations to Country (see also Levitus 2015:76). This understanding was advocated by Keen, who incorporated aspects of this Aboriginal perspective into the A*boriginal Land Rights (Northern Territory) Act*, after his work with the Mirarr and other *Bininj* (Levitus 2015 75-77; Peterson et al. 1977; see also Toner 2015). Despite their demonstrative Traditional and legal ownership and connection to their Country (see Chaloupka 1975, 1978; Keen 1975, 1980), the Mirarr have not had autonomy over Jabiluka since the 1970s.

### 2.3. Mirarr opposition to mining

The discovery of massive uranium ore bodies in the late 1960s and 1970s sparked the beginning of the Mirarr's fight against uranium mining (Levitus 2015:75). It was during this time that Toby Gangali passed on the name of a billabong in the region, Djabilugu, to researchers (e.g., Chaloupka 1978, CHALOUPKAG02.BW). Djabilugu became 'Jabiluka', and is now widely associated with the Jabiluka Lease Hold Area (e.g., Fox 1977). My use of the name Jabiluka reflects the GAC's — the organisation of the Mirarr — use of it in publications and public communication (e.g., Mirarr n.d.).

A comprehensive history of the Mirarr's opposition to mining is beyond the scope of this thesis; however, highlighting the restriction of autonomy the Mirarr have had upon their Country is significant. The second Fox Report (1977), the *Australia-Ranger Uranium Environmental Inquiry*, presents how the confiscation of control from the Mirarr and other Traditional Owners was justified, despite acknowledgement of their ownership of Country and objections.

> There can be no compromise with the Aboriginal position; either it is treated as conclusion, or it is set aside. We are a tribunal of white men and any attempt on our part to state what is a reasonable accommodation of the various claims and interests can be regarded as white men's arrogance, or paternalism… We have given careful attention to all that has been put before us by them or on their behalf. In the end, we form the conclusion that

> their opposition should not be allowed to prevail. (Fox et al. 1977:9)

The improper way in which Europeans have removed the agency of the Mirarr and other Traditional Owners is captured in the 1980s film Dirt Cheap (see also 'Dirt Cheap 30 years on' Mirarr n.d.). This film documented meetings concerning the creation of the Ranger and Jabiluka mines and a seizure of land and agency that began some 200 years previous. The Mirarr continue to fight against mining and care for their Country as their ancestors did. In contemporary northern Australia, caring for Country has also involved working with archaeologists to document and manage aspects of their cultural heritage.

### 2.4. Study area and the Mirarr Gunwarddebim project

The Mirarr Gunwarddebim project has been documenting rock art on Mirarr Country since 2011 (Mirarr n.d.). As noted, one of the project outcomes has been to produce a database management tool for the Mirarr to manage and look after their rock art in the present and for future generations. The project has and continues to document, study and promote rock art sites in Mirarr Country. In Chapter 5 of this thesis, I outline the methodology of the project and explain the systematic survey method that was employed to the record rock art sites. This method has enabled researchers of the project to better examine the data it produces and investigate questions about rock art and its significance for understanding the lifeways of people living at Jabiluka and the region (see Hayward 2016a, Hayward 2016b, Hayward 2017a; Hayward 2017b; Hayward et al. 2018; Johnston 2017, Johnston et al. 2017; Jones and May 2017; May et al. 2017a, May et al. 2017b; Miller 2016; Wright et al. 2014, 2016a). This is not to diminish the value of the previous surveys of Jabiluka (Chaloupka 1978; Cundy 1982; Morley and Lovett 1979, 1980) or rock art recordings completed in the area (Brandl 1988,MS 1348; Lewis 1988). In fact, these previous records were used by the project to relocate some sites and estimate the time required to survey particular areas. Moreover, the research from these surveys has greatly contributed to our understanding of the area. However, as technology and methods change the amount of data gathered increases and so does the complexity of the questions archaeologists can pursue. This research and the database will complement the Mirarr's ongoing management of their Country and rock art, as well as demonstrating the scientific significance of Jabiluka.

The Mirarr Gunwarddebim project has predominantly focused upon surveying in the Jabiluka Leasehold area, the excised mineral lease, which is labelled in red in Figure

2.6. The largest sandstone rock formation within Jabiluka is the Djawumbu-Madjawarrnja massif, approximately 5 × 2.7 km, which is an outlier of the Arnhem Land Plateau (Chaloupka 1978:4). Numerous small sandstone outcrops surround Djawumbu-Madjawarrnja and there are some larger formations north of the massif in the Jabiluka valley. This valley is formed by the Ngarradj Warde Djobkeng formation to the north, which means the 'sulphur-crested cockatoo cut it' (Chaloupka 1978:22; see Figure 2.6). The location of specific rock art sites, such as Djalalkurdubi, are not marked on the map.

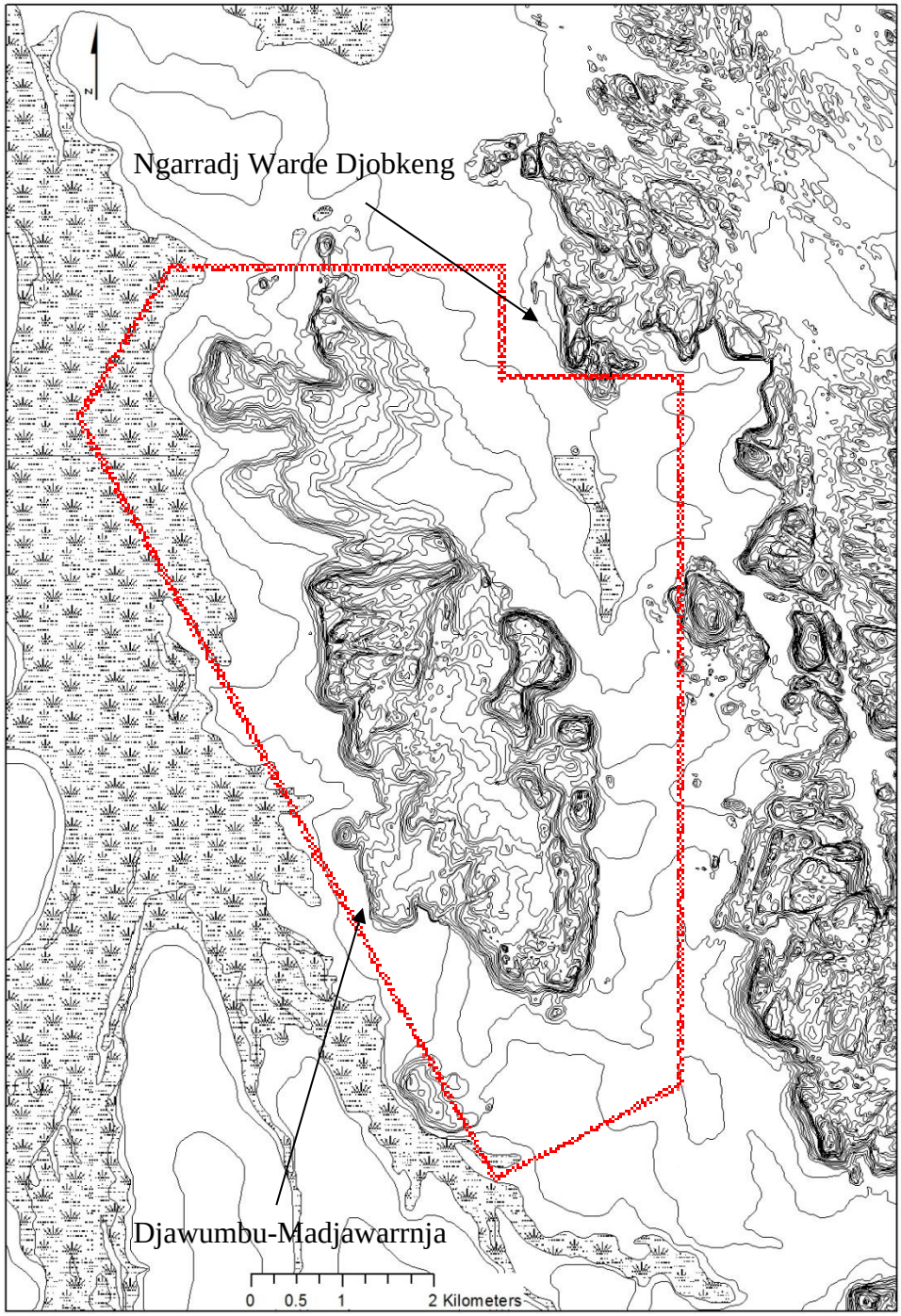


*Figure 2.6. Map of the approximate bounds of the Jabiluka Leasehold area (labelled in red) and the study area of this research.*

In 2015, a survey was conducted further south in Kakadu in the central valley of the Djidpidjidpi (Mount Brockman) massif, the valley is also referred to as Dangurrung (Chaloupka 1993a; Hayward et al. 2018). The data and rock art recorded during this survey is not the focus of this thesis but is referenced on certain occasions when I consider Dynamic Figure art beyond Jabiluka (see Figure 2.7).

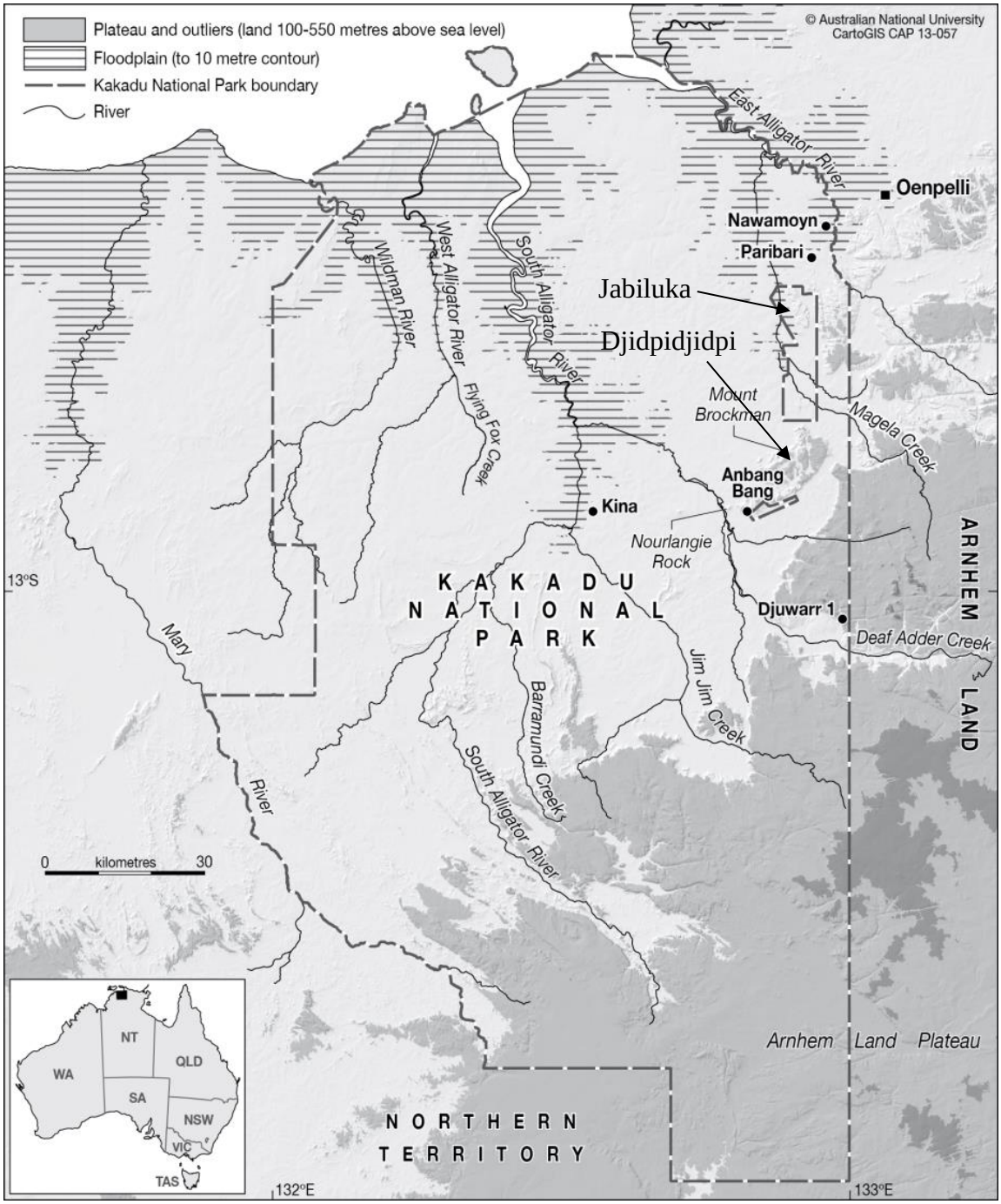


*Figure 2.7. Map showing the Jabiluka Leasehold area in relation to Djidpidjidpi and the greater Kakadu National Park and Arnhem Land region. (Source: CartoGIS CAP)*

## 2.5. Geology of Jabiluka

The Arnhem Land plateau was formed by ancient volcanic layers being covered by sedimentary sandstone deposits, known as the Kombolgie subgroup (Polito et al. 2011; Sweet et al 1999). It is this sandstone layer that the first people to reach Arnhem Land would have utilised (e.g., Roberts et al. 1990). The formation includes conglomerate, quartz and large shelters formed by erosion and collapse, a process that started when the plateau was a sea cliff and battered by waves (Hughes and Watchman 1983:41; Sweet et al. 1999:26). Over time these sandstone formations have continued to erode, spall, collapse and weather to create the shelters and overhangs that exist today (Hughes and Watchman 1983:42, Figure 2.7). While not every shelter has been painted, many thousands have, some with one or two motifs, others with thousands of motifs representing years of painting by many hands. At the same time, great masterpieces are observed fading in one's lifetime (e.g., the work of Najolbolmi and Djimongurr at the Anbangbang gallery) yet other small fragments, which have fallen from a shelter wall, last tens of thousands (e.g., David et al. 2013b).

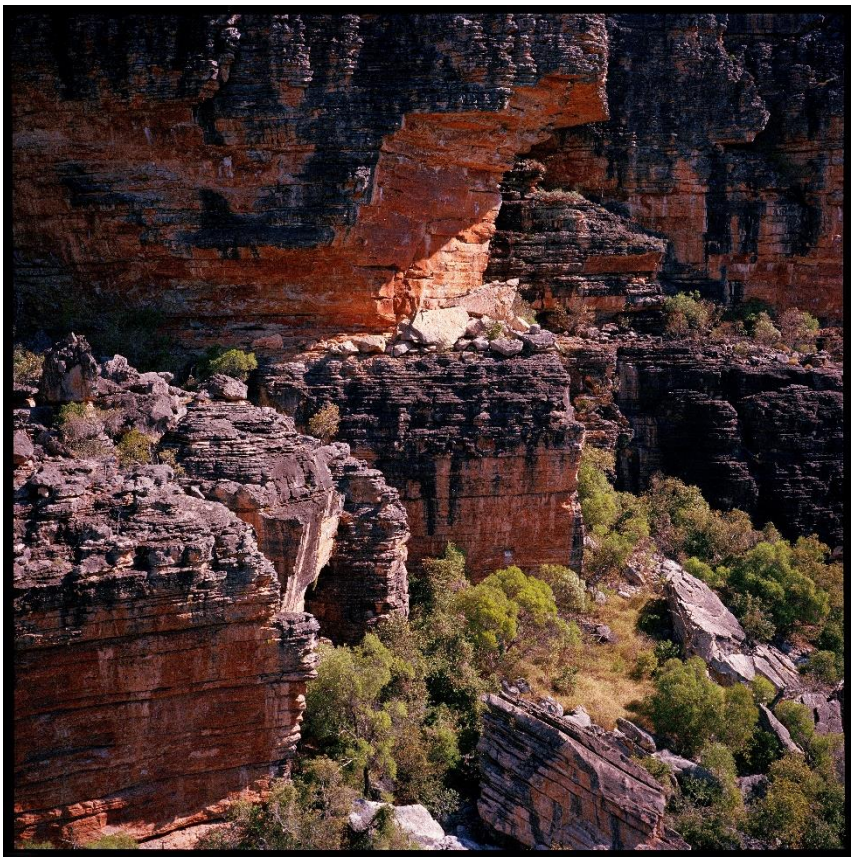

*Figure 2.7. View of a shelter in the Djawumbu-Madjawarrnja massif (Photograph: M. Abbott).*

## 2.6. Environmental context for Dynamic Figure art at Jabiluka

Today, the major rock formations of Jabiluka are surrounded by grasslands that are intersected with tributaries that run into the Magela Creek and the fresh water floodplain to the west (see Figure 2.4). Arnhem Land has a monsoonal, wet season and dry season, cycle; this landscape and conditions forming only 1,500 BP. (Allen and Barton 1989:11; Taçon and Brockwell 1995:676). There are also smaller billabongs at the eastern end of the valley, close to the escarpment, and at least two springs in the Djawumbu-Madjawarrnja massif itself. However, given the estimated considerable antiquity of Dynamic Figure rock art (see Section 3.3) it is important to consider the changing environment of the region.

Environmental change has continued to varying degrees since the arrival of people in Arnhem Land. One period of considerable change was the Pleistocene-Holocene transition, a period when Dynamic Figure art is said to have emerged (Taçon and Brockwell 1995:676; see also Jones et al. 2017). The Last Glacial Maximum (LGM), some 20,000 to 22,000 years BP, was the period which saw the lowest sea level for occupied Sahul, the greater continent of Australia and New Guinea (O'Connell and Allen 2007:395). At this time, northern Australia had a cooler semi-arid climate and was a considerably larger area, consisting of the Arafura and Van Diemen catchments, the plains which connected northern Australia to Papua New Guinea (Jones and Bowler 1980: 14; Lewis 1988:71-2). Jabiluka was a semi-arid open woodland and reminiscent of the region further south around Daly Rivers and Tennent Creek (Jones and Bowler 1980: 14; Lewis 1988:69; Taçon and Brockwell 1995:679).

After this time, a most dramatic change for the people living in northern Australia occurred, as the sea level rose and the climate altered towards the dramatic monsoonal system (Taçon and Brockwell 1995:676). Between 15,000 to 10,000 years BP sea levels rose rapidly, between 90-100 m, flooding the Arafura and Van Diemen catchments and isolating the Australian continent (Allen and Barton 1989:7; Chappell and Grindrod 1983:67; Jones and Bowler 1980:14; Lewis 1988:71-72; Taçon and Brockwell 1995:678). This marine transgression would have pushed populations living in these flooded areas further inland, and in direct contact with the people who already lived there (Taçon and Brockwell 1995:691; see Chapter 10). It was during, or less likely before, these changes to the landscape that Dynamic Figure art was produced (see Section 3.3) and that people developed the 'fundamentals' of Arnhem Land culture present today (Taçon and Brockwell 1995:676,684).

The next environmental phase, the Holocene, consisted of the creation of big swamps and rainforests because of the increased rainfall and the marine transgression (Taçon and Brockwell 1995:691; Woodroffe et al. 1986). This changing environment also helped to precipitate changing life ways and rock art for the people of northern Australia (Chaloupka 1993a; Lewis 1988; Taçon and Brockwell 1995:691).

In summary, Dynamic Figure rock art was most likely produced when the climate was dryer and cooler than contemporary northern Australia and the coast line was more than 100km from its current location. Although, some of the economic resources utilised by people today would have been present, the climate would better suit fauna which dominate further south in the semi-arid region of the Northern Territory. While Dynamic Figure art has remained in situ for thousands of years, the environment around it has change quite dramatically since it was painted.

### 2.7. Archaeological Context

In this section, I will provide an overview of the excavated archaeological research pertinent to this thesis. A review of literature relating to rock art and Dynamic Figure art research is in the next chapter.

The early Europeans who travelled through Arnhem Land in 19$^{th}$ and early 20$^{th}$ centuries often took photographs, notes and collected objects of the people they met on their journeys (e.g., Herbert Basedow see Brandl 1988:1-2; Edwards 1974:13-16; Kaus 2008). The first systematic archaeological research and excavation was undertaken by the 1948 American–Australian Scientific Expedition to Arnhem Land, at sites around Gunbalanya (Oenpelli), about 30 km from Jabiluka (e.g., McCarthy and Setzler 1960; see Allen 1989:92; Clark and Frederick 2011:136; May 2009).

The first excavations in the Jabiluka, described as part of the Alligator Rivers area, were undertaken by Schrire [White] (1982; see also White 1967) and Kamminga and Allen (1973). However, the most reported site of the Jabiluka area is Madjedbebe (formerly Malakunanja II) which was first excavated Kamminga and Allen (1973). Subsequent excavation by Jones, Roberts, Smith and Chippindale presented dates of occupation at Madjedbebe of between 52,000 ± 11,000 and 61,000 ± 13,000; however, these are contested (e.g., Allen and O'Connell 2003; Bowdler 1990; Clarkson et al. 2015; Hiscock 1990; Kamminga and Allen 1973; O'Connell and Allen 2007; Roberts et al. 1990a:154,1990b,1990c; Roberts and Jones 1994; Roberts et al. 1994, Roberts et al. 1998:20). Excavations in the greater Kakadu and western Arnhem Land region have

also produced evidence for early occupation (e.g., Bird et al 2002:1061-1062; Clarkson et al. 2015; David et al 2013b; O'Connell and Allen 2007; Roberts et al. 1994b). Jones and Bowler (1980:14) noted that many sites excavated with very early dates would have been considerably further inland when initially occupied, and not coastal sites as they are today because of sea level rise. Although Madjedbebe and other sites provide data for the investigation of the earliest occupation of northern Australia, it is the detailed archaeological record of these places, long after their ancestors arrived, that is most valuable for complementing the rock art they painted.

In the period before and during the Pleistocene-Holocene transition, when Dynamic Figure art was most likely being produced, excavations only provide some detail of the materials and artefacts people utilised. Madjedbebe and other sites demonstrate that people exploited ochre long before Dynamic Figure art production; although its exact usage cannot be determined, but broken pieces of rock from shelter walls with remnants of art demonstrate that among these functions was rock art production (Clarkson et al. 2015:62; David et al. 2013b). In his discussion of various sites at and near Jabiluka (Ngarradj, Madjedbebe Nauwalabila I; Nawulandja), Allen (1996:148) has described the excavated material from the period 18,000 to 5,000 years BP, a range which encompasses the most conservative and radical dates for Dynamic Figure art (see Section 3.3). This material consists of small quartz and chert flakes as well as polished stone axes (Clarkson et al. 2015:59-60; White 1967: 468; for similar descriptions of other areas of Arnhem Land see also Geneste et al. 2012). Of this material, he noted there are 'few if any definable core tools or scrapers' (Allen 1996:148; see also Allen and Barton 1989:77-87; Jones and Johnson 1985:215).

As noted in the introduction, stone artefacts abundant in the excavated record are rare or absent from the Dynamic Figure art record; yet the tools which these implements created, such as spears and boomerangs are prevalent (Clarkson et al. 2015:59). Absent from the excavated record at Jabiluka during this period are bone implements (David et al. 2013b:75; Langley et al. 2016). Once again, bone implements seemingly appear much more often in the rock art record and in Dynamic Figure art (Johnston 2017). The absence of organic material from excavations is typical in Arnhem Land and this dearth of material prompted Allen (1989:107), rather bleakly, to suggest that '…virtually nothing is known about Aboriginal subsistence activities before 7000 BP'. In contrast, an abundance of organic material exists in the rock art record (see May et al. 2017a).

The period after Dynamic Figure art production has been linked distinctly with a wetter climate and new influences to rock art production, namely yams and Yam Figures (see Hammond 2017); this has been broadly interpreted as indication that during the Dynamic Figure period yams were a less significance economic resource (Lewis 1988:102). Also, utilisation of shell fish and the formation of middens comes well after the understood period of Dynamic Figure art production at Jabiluka (Clarkson et al. 2015:60-61). The excavated story of Jabiluka is quite different from the one painted upon its walls and by incorporating both sets of data and information about the lives of its previous inhabitants can be understood.

### 2.8. Conclusion

This chapter introduced in more detail the Mirarr, the Traditional Owners of Jabiluka, and the study area of this research. I superficially explained the significance and connection the Mirarr have to their Country, although it goes far beyond what I have detailed (Mirarr n.d.). I also contextualised the Mirarr Gunwarddebim project, of which this research is part, into the history of the Mirarr's opposition to mining at Jabiluka and previous research of the area.

I have also briefly discussed the environmental and archaeological history of Jabiluka. A complete environmental and archaeological explanation of Jabiluka from its first occupation to the present is beyond the scope of thesis; therefore, I focused upon the periods before, during and immediately after the predicted age of Dynamic Figure art. This period is characterized by dramatic environmental change in Arnhem Land. In doing so, I briefly highlighted the differences between the rock art and excavated records and in the next chapter expand upon these difference as I review literature concerning Dynamic Figure art.

# Chapter 3: Studying Dynamic Figure Art

> *For art in Aboriginal Australia is seen as a form of spiritual power; it is an intervention of the world of the mythical past in the present. It is a means by which knowledge is passed from generation to generation about the creative force that shaped the world and will enable it to continue into the future.*
>
> Howard Morphy (1999:13)

## 3.1. Introduction

This chapter provides an overview of previous research of Dynamic Figure art. It also outlines research of rock art in the region that is pertinent to this thesis. As will be discussed, the primary focus of previous research concerning Dynamic Figure art has been to place the style within a western Arnhem Land rock art chronological sequence, with or without an estimated period of production (e.g., Brandl 1988; Chaloupka 1977, 1993a, 1984b, Chippindale and Taçon 1998; Haskovec 1992; Johnston et al. 2017; Jones 2017; Lewis 1988; Taçon and Chippindale 1994). Chronological sequences were ultimately the focus of many earlier rock art researchers as they helped to form a basis for further analysis. Consequently, there have been fewer discussions of how Dynamic Figure art can inform us about the people and culture who created it (see Johnston 2017; May et al. 2017a); however, there are some notable exceptions (Chippindale et al. 2000; Lewis 1988: Chapter 7; Taçon and Chippindale 2001a). Problematically, researchers less familiar with the Arnhem Land rock art assemblage, especially Dynamic Figure art, have cited observations made from chronological studies as evidence for peoples' lifeways at times in the past. For instance, suggesting that homogeneity in Dynamic Figure art demonstrated open exchange networks (Flood 1997:275-277). While these observations may be valid, they are poorly substantiated or scrutinised in chronological studies, which examine change over time and not how rock art can inform us about peoples' lifeways at a particular time in the past. This thesis addresses this issue as it focuses upon one art type and scrutinises observations made of Dynamic Figure art in previous chronological studies.

The first section of this chapter summarises the proposed stylistic chronological sequences of western Arnhem Land (Section 3.2). What follows is a discussion of the proposed ages for Dynamic Figure art and the methods employed to determine those ages (Section 3.3). Sections 3.4 to 3.8 present, chronologically, the contributions of researchers who have undertaken analysis of Dynamic Figure art, beginning with the earliest European researcher to undertake a focused study of western Arnhem Land rock art, Erhard (Eric) Josef Brandl. This order reflects the process of refinement of the proposed western Arnhem Land rock art sequence and how research of Dynamic Figure art has evolved. In the discussion of each researcher's contributions to the literature, I highlight how their research has influenced this study and situate this thesis into the broader understanding of Arnhem Land rock art.

The headings of this section of the chapter are as follows:

3.4 Brandl's 'early' Mimi Figures
3.5 Chaloupka's Dynamic Figures
3.6 Lewis's Boomerang Period
3.7 Taçon and Chippindale's revised chronology
3.8 Haskovec's revisit to Mount Gilruth

Section 3.9 contrasts the methodologies employed by each researcher and their implications for this research. This is followed by a discussion of other aspects of Dynamic Figure art research that received less discussion in the chronology section, including fauna (Section 3.10) and stencils (Section 3.11) In the final parts of this chapter, Section 3.12, I highlight previous Dynamic Figure art research that concerns headdresses and more broadly their connection to ritual practice in a northern Australian context and also outline the relationship between Dynamic Figure art and the Gwion Gwion rock art of the Kimberley (Section 3.13). I conclude this chapter by focusing upon the key questions that emerge from previous studies, including gaps in our existing knowledge.

### 3.2. Chronologies compared

The artistic assemblage of Arnhem Land rock art is immense and conservative estimates suggest that there could be more than 15,000 rock art sites in Kakadu alone, only part of the western Arnhem Land rock art province (May et al. 2011:36; May and Taçon 2014:4236). While the density of rock art in western Arnhem Land is remarkable, its antiquity, diversity and the *Bininj's* continued cultural connection to their rock art greatly increases its significance (May and Taçon 2014: 4236). Based upon the diversity and density of rock art in Kakadu, researchers have been able to distinguish at least eleven overarching rock art styles which they have formed in to various sequential rock art chronologies (e.g. Brandl 1988; Chaloupka 1984b, 1993a, 1993b; Chippindale and Taçon 1998; Lewis 1988; Taçon and Chippindale 1994). In this context, style is defined as a distinct and identifiable manner of painting; however, see Chapter 4 for a full discussion style and its usage in rock art research. The methods used by each researcher to develop these sequential chronologies are discussed in detail in Section 3.9.

Table 3.1 is a comparison of the early sections of each of the proposed sequential chronologies of western Arnhem Land. This table illustrates the placement of Dynamic Figure art in each of these chronologies (highlighted in grey) and demonstrates the approximate consensus between researchers of the placement of Dynamic Figure art in the rock art sequence. Almost unanimously, Dynamic Figure art is second in the sequence preceded by a phase that is stylistically different, described variously as naturalistic fauna. Dynamic Figure art is succeeded by gradual stylistic change of the human figure form, a change in the technology depicted and regional variation. How each researcher described and classified these changes is described in their respective sections below (Sections 3.4 to 3.8).

### 3.2.1 Table of the proposed Arnhem Land rock art chronologies

**Table 3.1. A comparison of the early western Arnhem Land chronologies**

| Time (Years BP) | Brandl | Chaloupka | Lewis | Taçon and Chippindale | Haskovec |
|---|---|---|---|---|---|
| ?50,00-20,000 | | Object imprints, mega fauna | | Panaramitee-like rock engravings pigment in shelter deposits | |
| 20,000 | | Large Naturalistic | | ?Break | |
| ? | | | | Large Naturalistic | Archaic Paintings |
| ? | | Dynamic Figures | | | |
| 11,000 | | Phase 1 | | ?Break | Dynamic Figures |
| ?10,000 | | Phase 2 (*Classical* Dynamic Figures) | | Dynamic Figures Boomerang period | |
| ?9,000 | | | | | |
| No proposed dates | ‘Pre-Early’ Mimi Figures | Phase 3 | | | |
| No proposed dates | ‘early’ Mimi Figures | Phase 4 (no proposed dates for individual phases) | | | |
| | | | | Dynamic Figure Art Phase | |
| These styles ending approximately 8,000 years ago | | Post-dynamic Figures Simple figures with boomerangs Northern running figures Yam figures | | | Yam Figures |
| No proposed dates | Late Mimi Figures | | | | |
| These styles beginning approximately 6,000 years ago | | | ‘Hookstick’ period | Post-Dynamic Figures | |
| | | | | Simple Figures with Boomerangs + some large fauna rock-paintings | Northern Running Figures |

Compiled from Brandl (1988); Chaloupka (1993a); Chippindale and Taçon (1998); Haskovec (1992) and Lewis (1988).

Key:
Grey area represents the Dynamic Figure art phase,
Brandl did not suggest date ranges for his chronology;
Dates prefixed by a ‘?’ correspond to Lewis (1988) and Chippindale and Taçon (1998)
Dates without a ‘?’ correspond to Chaloupka (1993a) and Haskovec (1992).

In Table 3.1, the naming and dating conventions of each researcher has been kept in reference to their work. Note that certain styles in each chronology are contemporaries but have been shifted to show the estimated dating paradigm of each researcher(s); for example, the 'Hookstick' period and post-Dynamic Figures are part of the same phase. Also, as will be explained below, Haskovec's Archaic style is not an equivalent of the Large Naturalistic style. Brandl's chronology has been placed in the table with the latest date range for Dynamic Figure art; this may not represent his views and should not been interpreted as a representation of his proposed age for 'early' Mimi Figures. Overall, the size of each block in the table is not indicative of periods of time; for example, Brandl (1988:176) argued the 'early' Mimi style may represent a long period of cultural stability yet has the smallest area.

Many of these chronologies were developed from sequences created at key sites and then tested, to various degrees, more widely across the region (e.g. Chaloupka 1977; Chippindale and Taçon 1993; Haskovec 1992). Chaloupka's chronological model was mainly based on superimpositions observed in the rock art of Mt Gilruth and extended via data obtained from his more widespread surveys, the most detailed of which came from Deaf Adder Gorge and Mt Brockman (Chaloupka 1977, 1984a, 1984b; see section 3.5).

### 3.3. Dating Dynamic Figure art

Ascribing accurate and useful dates to the early rock art of Australia has been difficult (see Franklin 2004; Langley and Taçon 2010). The oldest reported age of rock art in western Arnhem Land is 26,913–28,348 years BP; however, these are remnants of art and cannot be related to any chronology (David et al. 2013a, 2013b).

Dynamic Figure art is argued to have been painted around 11,000-12,000 years BP and possibly continuing for a 2000-year period, likely during the latest Pleistocene or earliest Holocene periods (Chippindale and Taçon 1998; Haskovec 1992; Lewis 1988; May et al. 2017a; Taçon and Brockwell 1995). The evidence for this argument is drawn from superimposition analyses and direct dating of later art assemblages, most recently from the Northern Running Figures or Mountford Figures, a style that succeeds Dynamic Figure art (Jones 2017; Jones et al. 2017, see Table 3.1). Jones et al. (2017) proposed the radio-carbon ages of Northern Running Figures by extracting calcium oxalate contained within mineral crusts above and below the rock art. Previous unsuccessful attempts to directly date Dynamic Figure art using calcium oxalate were

carried out by Watchman (1990; 1991; 1993), although he was able to conclude that Dynamic Figure art was likely painted before 10,000 BP.

Researchers have also inferred relative ages for Dynamic Figure art from various methods, these are discussed and scrutinised in detail in their respective sections below. For instance, Chaloupka (1993a:106) argued for a period of Dynamic Figure art production which began between 20,000 years BP and 8000 years BP based upon an association between distinct environment periods in the Arnhem Land paleo environmental record and the fauna associated with Dynamic Figure art (see section 3.5). The relative ages of Dynamic Figure art, like those inferred from direct dating of other rock art styles, suggests it was produced in the late Pleistocene or early Holocene.

This relative dating estimate of late Pleistocene or early Holocene is accurate enough for this research project as the aim is not redefine or date the western Arnhem Land chronology but expand our understanding of the people who produced Dynamic Figure art.

### 3.4. Brandl's 'early' Mimi Figures

Brandl ([1973]; 1988) was the first researcher to complete a comprehensive study of the rock art of western Arnhem Land and specifically identified 'early' Mimi art [Dynamic Figure art] (for the first European perspectives of Arnhem Land and its rock art see Edwards 1974:13-16; Taçon 1989a:27-31). The 1948 American-Australian Scientific Expedition to Arnhem Land did record a number of rock art sites in the region and, in particular, Mountford noted differences and subjects in the art (Mountford 1956; May 2009). However, his work focused upon observations and random, simple recordings with limited analysis. His major contribution was to suggest a binary comparison between older red pigment art and recent X-Ray art (Mountford 1956:6-8,109,112; Taçon 1989a:27-31). Mountford's study did not consider the implication of chronological change in any great detail (e.g., Mountford 1956:112). While not wanting to dismiss the research undertaken by Mountford in 1948, his work stands in stark contrast to the measured and thoughtful research undertaken by Brandl in the 1960s, although he may have begun in the late 1950s (see AIATSIS MS 1348). This work deserves a more detailed overview as his early observations have been echoed by subsequent researchers and have influenced our understanding of Dynamic Figure art and the artists that created it to this day.

Brandl was born in Czechoslovakia on the 23 of December 1923 and moved to Australia after serving in Africa during the Second World War. Initially he worked as a miner at the Mount Isa Mines, but transferred to the Carpentaria Exploration Company to work in exploration and it was in this position, as well as overland bicycle journeys, that brought him in contact with the Aboriginal people of northern Australia and their rock art. Brandl had had an early interest in art and art history and was immediately taken by the people and rock art of Arnhem Land and with his wife, Maria (married 1963), moved to Perth to study anthropology under Professor R.M. Berndt and Dr C.H. Berndt. In a life cut short (he died in 1974), he conducted numerous solo and accompanied archaeological, anthropological and ethnographic surveys of Arnhem Land working with Traditional Owners to record information about places and people however, he only published one major work *Australian Aboriginal Paintings in Western and Central Arnhem Land: Temporal sequences and elements of style in Cadell River and Deaf Adder Creek art* (1973, republished 1988; Figure 3.1). (For further details see my correspondences with M. Brandl in AIATSIS MS 1348)

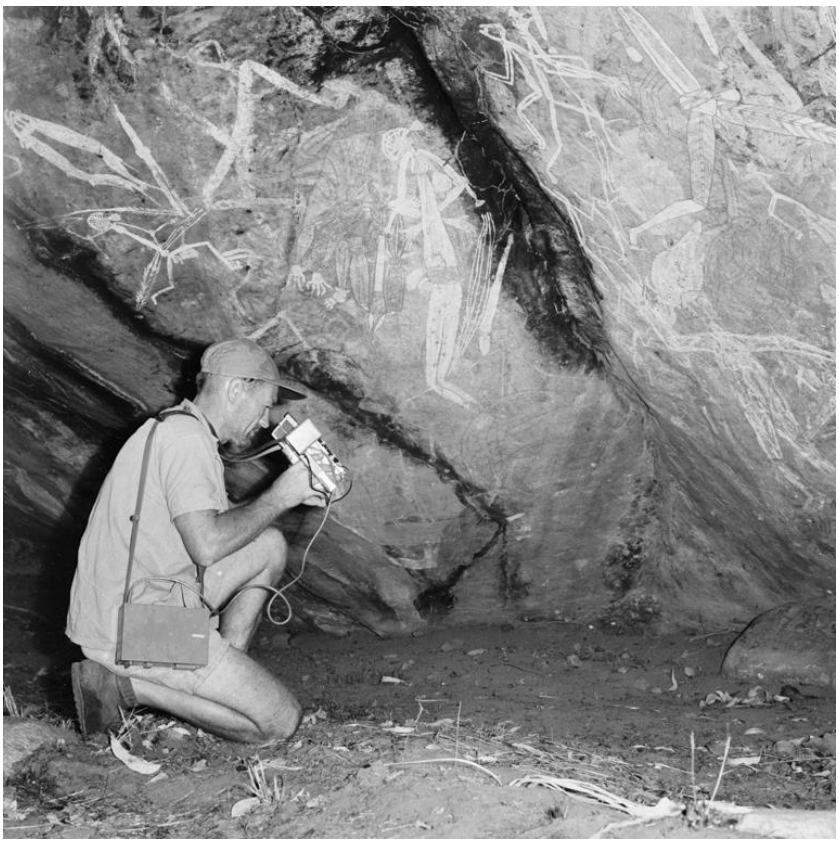

*Figure 3.1. Eric Brandl recording a rock shelter in 1968 (Source AIATSIS BRANDL.E13.BW-N0855721).*

### 3.4.1. Brandl's method

Brandl (1988) developed his stylistic chronology of western Arnhem Land rock art from his surveys of the Deaf Adder Creek and the Cadell River areas. He defined style as 'denot[ing] a distinct manner of painting, or in other words, a particular group of paintings with common characteristics that distinguish it from other such groups of paintings' (Brandl 1988:72). In this way, he identified and isolated motifs by their formal attributes; a method likely influenced and adopted from his early studies and passion of art in Europe (Maria Brandl pers. comm. 2016). He noted that Deaf Adder Creek '…holds an abundance of data which may provide the key to the complete delineation of styles in Arnhem Land rock art: the material evidence for a systematic taxonomy of styles with a hierarchically oriented terminology' (Brandl 1988:72). In short, Brandl observed repeated artistic forms, grouped these together as styles and understood that these styles denoted a specific people from a specific time in the past. In Arnhem Land, this methodology had first been imperfectly adopted by Mountford (1956) but has its origins in Europe, where researchers investigated the differences between Palaeolithic and post-Palaeolithic rock art traditions (e.g., Breuil 1920; Gjessing 1936,1939; see also Francis 2001, Chapter 4). Brandl then ordered the styles he observed into a chronological sequence from earliest to latest based upon logical observations of changing material culture and superimposition; once again a process that has its origins in European rock art research (e.g., Breuil 1952,1955-1975; Hallström 1938; Leroi-Gourhan 1967). Although, he doesn't reference much of this earlier research he does cite the works of Macintosh (1952), McCarthy (1958) and Mountford (1956) as Australian examples of early chronologies studies.

Brandl developed his chronological sequence through an analysis of the changes in material cultural and technologies. Concerning spears, he argued that 'early' Mimi Figures are depicted with simple spear types, a single pointed shaft sometimes barbs down one side, and an absence of spear throwers which are prominent in subsequent styles (Brandl 1988:173). He argued that the absence of spear throwers and fewer spear types demonstrated some antiquity to the 'early' Mimi art style and its early placement in the sequence, especially as these objects were also prevalent in the ethnographic record (Brandl 1988:173-175; he cited Davidson 1936). His subsequent substyle 'late' Mimi art is partly defined by the depiction of spear throwers and increasing types of spears being depicted (Brandl 1988:175-176). Similarly, the high frequency of boomerangs depicted in a hunting context with 'early' Mimi Figures further suggested

their antiquity; as the frequency of boomerangs decreases in later Mimi art phases and is almost non-existent in the X-Ray art period (Brandl 1988:173). To qualify this, he reported that boomerangs are still used by contemporary Aboriginal people, although, only as a musical instrument and not for hunting (Brandl 1988:173).

Brandl's other method to develop his chronology was that of superimposition analysis (overlays); that is, observing which motif was painted above another to create a sequence (Brandl 1988:172). He noted that this method was problematic and required numerous sites in close proximity with the same stylistic markers for reliable results (Brandl 1988:172). He highlighted the comparative suitability of Deaf Adder Creek and unsuitability of the Cadell River area as an example of the problem with this method (see Brandl 1988:100, Figure 228).

Brandl's published chronology was developed from these methods and his extensive field surveys. Despite his primary publication (Brandl 1988) only focusing on two regions, he had surveyed numerous other areas in western Arnhem Land including Burrungkuy (Nourlangie Rock), the East Alligator River, Mount Brockman, Oenpelli (Injalak Hill and surrounds) and the Red Lilly areas (AIATSIS MS 1348; Brandl Photographic Collection). Although not presented as part of his published chronology the rock art recorded on these surveys likely contributed to his research.

### 3.4.2. Observations and chronology

Brandl's chronology has two overarching styles, Mimi art and X-Ray art, which are further subdivided (Figure 3.2). His 'early' Mimi Figure (Dynamic Figure) style forms a significant phase in his stylistic chronology. Mimi art is an ethnographic term he developed and adopted from Mountford (1956:112, 258); although according to Brandl, Berndt and Berndt may have also used it before this to describe early rock art styles of the region but not a specific style (Brandl 1988:167 citing Berndt and Berndt 1964:357). According to the Traditional Owners of Arnhem Land, Mimi are cheeky spirits who live in the Stone Country and who painted themselves into the rock to show Aboriginal people how to live properly on their Country during the Dreamtime (see Berndt & Berndt 1977:5; Mountford 1956:112, 258)

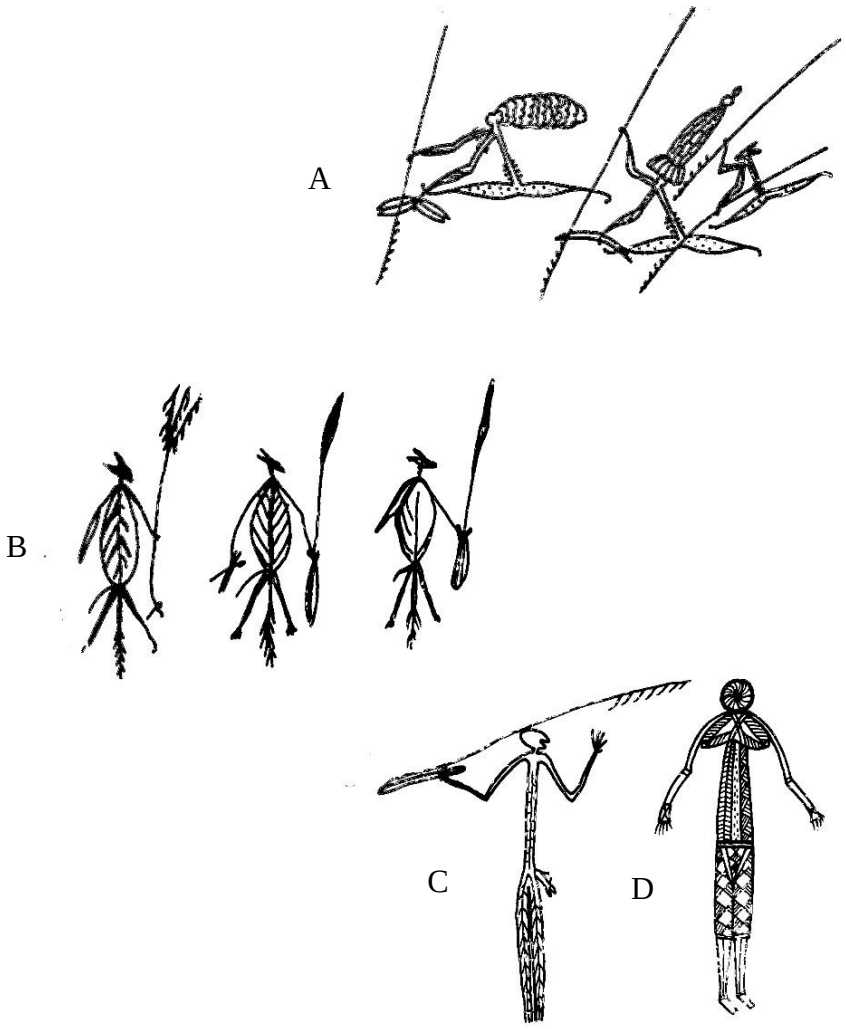


*Figure 3.2. Following Brandl (1988:35, Figure 72): Typology of symbolistic representation in Arnhem Land rock art: (A) 'early' Mimi art; (B) 'late; Mimi art, with simple X-Ray features. (C) 'early' X-Ray art, retaining features of Mimi style; (D) 'late' X-Ray art.*

Brandl situated ‘early’ Mimi Figures as second in his chronological sequence. They are preceded by a rare and poorly preserved style consisting of large filled or silhouetted animals and humanoids, pre-‘early’ Mimi art (Brandl 1988:183). ‘Early’ Mimi art is clearly identifiable as different from this earlier style, yet no examples of transitional motifs exist between these styles (Brandl 1988:183). He also argued that uniformity of the ‘early’ Mimi style and his Mimi phase more broadly represented a long period of cultural stability (Brandl 1988:176).

Brandl (1988:169) described ‘early’ Mimi Figures as human figure motifs in exaggerated motion or action with disproportionate limbs, bodies and cultural adornments. Motion is portrayed through extravagant depictions of outstretched legs and arms and the contortion of the body. There are no facial features of the human figures depicted (Brandl 1988:169). He observed that, contrary to the humanoid figures, zoomorphs and fauna of the style were depicted in a relatively or completely static poses, this observation was later dismissed by Chaloupka (Brandl 1988:173; Chaloupka 1993a:118). Brandl observed that all ‘early’ Mimi Figures were exclusively painted from a side on ‘aspect’ and have no X-Ray internal features depicted. Instead, artists focused on the external patterning of people and fauna, typically life imitating designs were used to represent an emu’s feathers or the stripes and banding of a thylacine (Brandl 1988:167). In an earlier report from a survey of Deaf Adder Creek, Brandl hypothesised that a specific type of ‘early’ Mimi Figure may exist local to this one valley system which could be identified through specific attributes; however, this was not researched further (Brandl 1970).

Brandl (1988:167) concluded from his surveys that ‘early’ Mimi art was painted in red ochre. He noted a single exception, a white motif at Mount Gilruth, and instances where traces of yellow and orange existed that could be ‘early’ Mimi art (Brandl 1988:173). Subsequent researchers have demonstrated that more examples of white, yellow and black Dynamic Figures do exist, although still as a substantial minority (Gunn and Whear 2007). This is most likely because of the disintegration of pigment over time and the longevity of red ochre, rather than a cultural preference (Chippindale and Taçon 1998:103).

### 3.4.3. Interpretation of scenes and motifs

Brandl argued that the activities depicted in ‘early’ Mimi art are significant for understanding the culture and people that created them. The interplay between motifs,

through the crossing over of weapons and other material culture, and the *geographic* relationships between motifs on the walls demonstrated that artists composed their motifs as narrative scenes (Brandl 1988:173; Figure 3.3). This complexity in depiction had not been identified in the earlier naturalistic art style (Brandl 1988:173). This observation has significantly shaped my own research; and following Brandl, a focus has been to better understand the range and recurring activities in these scenes.

*Figure 3.3. Following Brandl (1988:47, Figure 89) and Lewis (1988:191, Figure 37): Depiction of the Rainbow Serpent, a mythological being, in the 'early' Mimi style; this scene was interpreted by Brandl's informants as the way the old people painted the Rainbow Serpent.*

Brandl interpreted that 'early' Mimi art scenes are associated with ritual, '[g]enerally, the accent in the theme of 'early' Mimi art appears to be on esoteric rather than every day activity' (Brandl 1988:172). Figure 3.3 highlights this ritual association, where ten human figure motifs, with various material culture objects, interact with an enormous

snake (see also Johnston 2017). Brandl's informants, Spider Murululmi, a Ngalgbon man, and Mandarg, a Rembarng, man, identified the scene in Figure 3.3 as how the 'Old' people, ancestral spirits or Mimi, depicted the Rainbow Serpent, a significant religious being in Aboriginal mythology (Brandl 1988:47, Figure 89; see also Johnston 2017; Mountford 1956:112; Taçon 1989a). Brandl's argument for a ritual association followed Berndt (1964:3) who argued that Aboriginal art is intrinsically sacred.[1] Specifically, of 'early' Mimi art he argued for a reverence and effort spent to depict adornments; consisting of elaborate and varied headdresses and ceremonial material culture: arm and leg bands, varied skirts, dilly bags and belts (Brandl 1988:172-173; see also Figure 3.3). Brandl's (1988:173) informants also identified 'dancing skirts' worn by 'early' Mimi Figure motifs as material culture associated with ceremony. Of course, Brandl's interpretation is that of an outsider and Ross and Davidson (2006:306), among others, note that ritual is used as '…a catch-all for 'odd' or otherwise not understood behaviour'. Therefore, the primary research focus of my thesis is to employ a more rigorous methodology and theoretical framework to examine ritual in Dynamic Figure art.

Brandl's discussion of sexual dimorphism in 'early' Mimi art is limited and he argued that in the vast majority of motifs and scenes no sexual organs are shown, but a motif's sex is '…implied by their activities' (Brandl 1988:173). In his mind, men were hunters; therefore, depictions of motifs hunting are men. He noted isolated examples of female motifs, identified by their breasts (Brandl 1988:173). Conversely, the penis is depicted rarely, maybe once, but on a few occasions on the therianthrope 'kangaroo man' (Brandl 1988:173). Brandl explained that, according to Spider Murululmi, the breasts must be depicted on a female; therefore, all non-breasted figures are male (Brandl 1988:173). The interpretation of sex, gender roles and gendered material culture is another line of enquiry in my own research as researchers have demonstrated the value of rock art specifically for examining gender in the past (e.g., Hays-Gilpin 2004, 2012; Smith 1991, see Section 10.4). For example, are these observations about sexes statistically accurate; what material culture objects are female motifs most likely depicted with and in what types of activities?

[1] Berndt's expansive anthropological research with the Aboriginal people of Arnhem Land, and across Australia, demonstrated that art and religion are intrinsically linked, Berndt and Berndt wrote: 'Much of Aboriginal art – visual, representational, oral or action-focus – had both purpose and direction: much of it too was directly inspired by religion (Berndt & Berndt 1977:447).

When investigating ‘early’ Mimi art through ethnography, Brandl (1988:165) argued that ‘early’ Mimi art was the work of a distant cultural group and noted that his informants referred to its creation by ‘Old people’ or Mimi spirits. While he observed continuation between the oldest rock art and the most recent X-Ray depictions, ‘gradual cultural development’ meant that the people whom he spoke with could not interpret ‘early’ Mimi art with the same confidence as X-Ray art (Brandl 1988:165). For an example of his use of ethnography to identify faunal species in more recent art see Brandl (1980).

### 3.4.4. Key findings from the work of Brandl

Brandl’s research on Dynamic Figure art was extensive and the discussion above highlights many of his observations. His key contributions to our understanding of Dynamic Figure art were to establish their early placement within the western Arnhem Land rock art sequence and codified Dynamic Figure art as a stylistic unit. This he achieved through identifying their material culture assemblage. His other major contribution was to demonstrate the significance of scenes in Dynamic Figure art and their value for understanding past ritual behaviour.

My own research is focused upon ritual practice in this body of art and his conclusion that Dynamic Figure art is principally esoteric and ritual in subject helped form the principal research question, does Dynamic Figure rock art provide insights into past ritual behaviours in western Arnhem Land? The following sections summarise the researchers after Brandl and highlight the contributions they made to the research of Dynamic Figure art.

## 3.5. Chaloupka’s Dynamic Figures

George Chaloupka was the first researcher to revise and refine aspects of the chronology Brandl proposed for western Arnhem Land rock art (Figure 3.4). However, his contribution to our understanding of rock art and his efforts to preserve and protect rock art in the northern Australia were enormous (Smith 2012). Chaloupka was also Czech and immigrated to Australia in 1950, where he worked as a hydrologist (Smith 2012:23). He strived to ensure Indigenous voices were heard in matters that concerned their heritage and in 1978 nominated Djawumbu-Madjawarnja (Jabiluka) for the Register of the National Estate (Chaloupka 1978; Smith 2012:24). For his contributions to rock art research and conservation he received an Order of Australia (Smith 2012:24)

In this section, I focus upon Chaloupka's contribution to our understanding of Dynamic Figure art (Chaloupka 1977, 1984a, 1984b, 1988/1989, 1993a, 1993b) and not his entire body of work which culminated in *Journey in Time: The 50,000-Year Story of the Australian Aboriginal Rock Art of Arnhem Land* (1993a).


*Figure 3.4. Portrait of George Chaloupka (Photograph: Gilbert Herrada. Source: The Australian).*

### 3.5.1 Chaloupka's chronology and method

Chaloupka's major research focus was to identify and better define the rock art and chronology of western Arnhem Land (1993a). While, he tested the chronological sequence Brandl had presented he also saw it as vital to better described the plethora of rock art styles from across the Arnhem Land plateau (Chaloupka 1977; 1984b:iii). In doing so, he argued that particular rock art styles indicated relationships to the paleoenvironmental record of Arnhem Land and these observations allowed him to suggest approximate time periods for certain styles to be painted (Chaloupka 1984b). Providing age approximations as part of his rock art chronology was a major contribution for understanding Arnhem Land rock art (Chaloupka 1993a; see below)

Chaloupka predominantly considered style from an etic perspective, therefore, a chronological tool for rock art research (Chaloupka 1984b:iv; Johnston et al. 2017). Following Brandl, Chaloupka (1993a:89) identified styles from the diversity and density of rock art and proposed a chronology consisting of at least eleven overarching rock art styles. He ordered these styles though superimposition analysis that was initially

conducted at two key sites at Deaf Adder Creek and Mount Gilruth (see Chaloupka 1977,1984b: Sites 131 and 133). Lewis believes that these sites were revealed to Chaloupka by Brandl, as the sites were pivotal in the development of Brandl's chronology (Lewis pers. comm. 2015; see also Brandl 1988). Chaloupka (1984a) triangulated his chronology with further surveys and investigations of rock art superimpositions in the other areas of Kakadu. Although, Chaloupka relied upon superimposition to develop his chronology, he also considered the change of material culture and environment depicted in the rock art and how these factors may have influenced what and how people painted. His later research had an analytical and statistical focus which my own research builds upon (Chaloupka 1993a, see below).

Methodologically, Chaloupka's major contribution (relevant to this study) was to correlate his rock art sequence with the environmental record of northern Australia (Chaloupka 1984a, 1993a). He argued that the rock art styles he observed, especially the different flora and fauna of each style, corresponded with substantial environmental changes in Arnhem Land's past, he described these as the pre-estuarine, estuarine and freshwater environment periods (Chaloupka 1984a,1993a:89,1993b). These periods were developed from zoological and biotic evidence derived from archaeological excavations of the Arnhem Land region (Chaloupka 1993a:40-41).

Dynamic Figure art was placed in his pre–estuarine period, which consisted of seven consecutive stylistic groups (Chaloupka 1993a:89):

1. Hand prints, grass prints and imprints of thrown objects
2. Large naturalistic animals and human beings
3. Dynamic Figures
4. Post-Dynamic Figures
5. Simple figures with boomerangs
6. Mountford Figures
7. Yam Figures

The pre–estuarine period represents rock art production during the late Pleistocene and ranges from a time near the glacial maximum until substantial sea level rise in the early Holocene (Chaloupka 1984b:v). The pre-estuarine period dates from 20,000 years ago until a time between 9,000 to 7,000 years ago, when Arnhem Land had a semi-arid and cooler climate (Chaloupka 1984b:v; Figure 3.5).

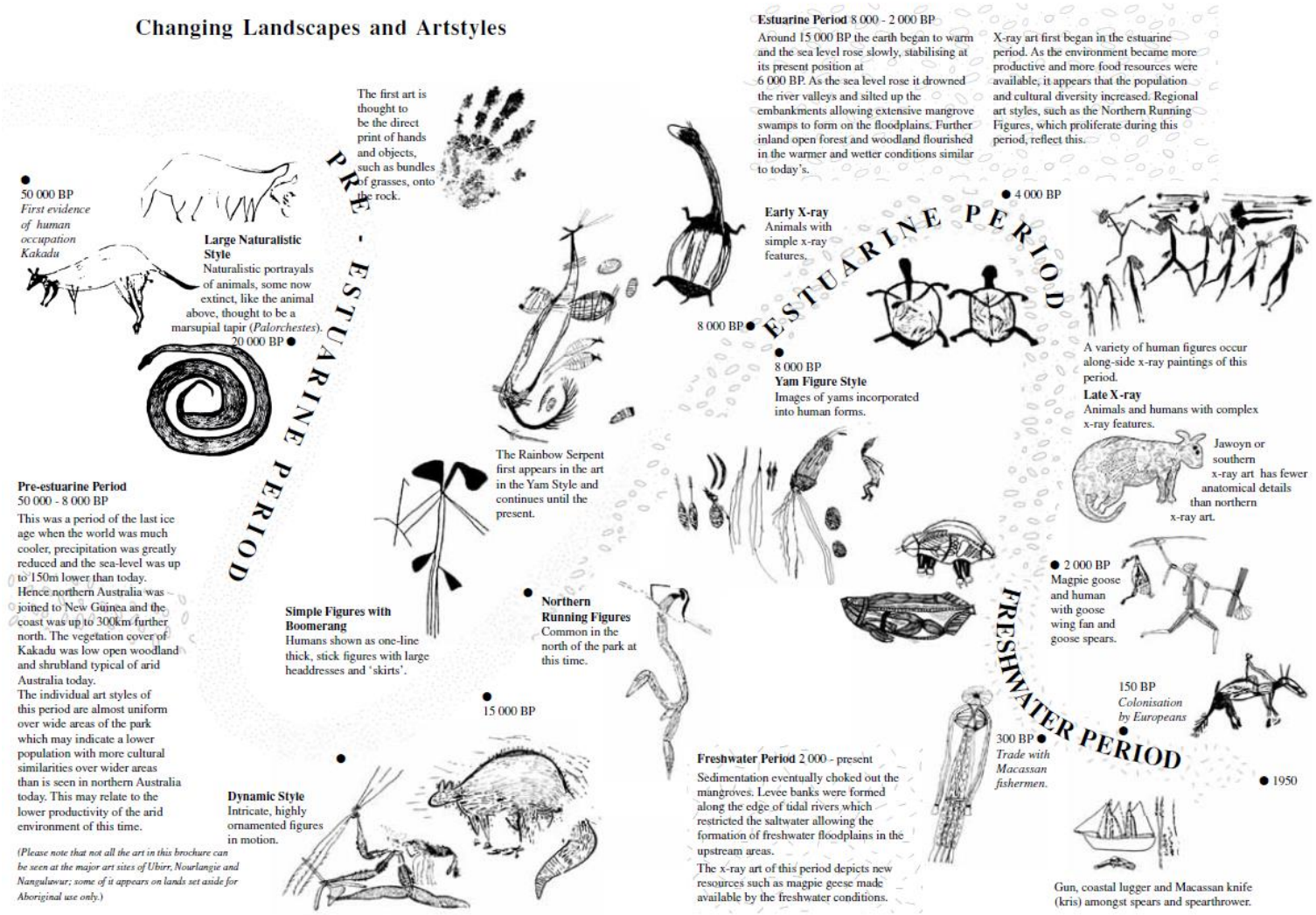


*Figure 3.5. Illustrated example of Chaloupka's chronology from Kakadu National Park brochure (2007).*

In his initial phase of research, Chaloupka renamed 'early' Mimi Figures, Dynamic Figures, because the '…style translated the intensity of the physical motion into pictorial dynamics' and he believed that Brandl's nomenclature was too broad for his aim of isolating specific rock art styles (Chaloupka 1977:252). He described Dynamic Figure art in similar terms to Brandl. Chaloupka suggested that Dynamic Figure art predominantly comprises of small human figures, animals and therianthropes (figures comprising human and animal elements) portrayed in animated and dynamic actions (Chaloupka 1993a:106). Chaloupka argued that Dynamic Figures required a specific focus because of their artistic complexity and their influence upon subsequent art styles (Chaloupka 1977,1993a:106).

Chaloupka (1984b:vii) observed that the majority of fauna depicted in this style were macropods, of which the northern black wallaroo is the most frequently depicted (Figure 3.6). He also identified emus, echidnas, rock possums, thylacines and specific fish and bird species as well as fewer examples of Tasmanian devils, numbats, snakes, long neck turtle, lizards and a major skink (Chaloupka 1984b:vii). He associated this faunal assemblage with a semi-arid and cooler climate than contemporary northern Australia and this supported his conclusion from his superimposition analysis that Dynamic Figure art was early in the Arnhem Land rock art sequence (Chaloupka 1993a:118). The majority of Dynamic Figure art motifs were in red ochre, but examples of white and yellow were recorded (Chaloupka 1984b:vii).. He noted that bi-chrome figures may or still potentially exist, as one site shows a red figure without hands or feet which he suggested were washed away in the distant past as the colour bound less well to the rock surface (Chaloupka 1984b:vii).

*Figure 3.6. Example of a Dynamic Figure style macropod recorded by Chaloupka, note that it has few corresponding attributes of a single macropod species (Source: TRN-M181 MAGNT).*

Chaloupka's (1984b) *Rock Art of the Arnhem Land Plateau: Paintings of the Dynamic Figures Style* is the largest report of Dynamic Figure art and the dataset used for his statistical research. Although, his results are presented in Chaloupka (1993a). His precise statistical research questions were not overtly clear, but he did undertake some fine-grained analysis. His statistical results mainly concerned identifying the percentage of motifs carrying a specific material culture object or recording how many are in a standing pose etc. (Chaloupka 1993a:106-110). It is likely that he aimed to present an overview of what was typical and unusual in Dynamic Figure art. He may have also intended to use this data to support his argument of the homogeneity among Dynamic Figures (see section 3.5.4).

The report (Chaloupka 1984a) was collated from sporadic rapid field surveys across the Arnhem Land plateau, unlike my own study of a small systematically recorded area (see Chapter 5). As his recording method was quite different it is not necessarily valuable to simply compare his general study to the Jabiluka assemblage in order to draw conclusions about Dynamic Figure art. For example, statistical differences between the two sets of data would not necessarily demonstrate painting preferences or stylistic attributes unique to Jabiluka. Therefore, Chaloupka's statistical analysis is incorporated into only parts of this study.

Chaloupka (1993a:106) observed many of the same attributes and features of Dynamic Figure art that Brandl had; for example, the prevalence of headdresses and the absence of spear throwers. These observations are not discussed in this section to reduce repetition in this chapter. Readers should also note this for the following sections concerning Lewis's, Taçon and Chippindale's and Haskovec's contributions to the study of Dynamic Figure art.

### 3.5.2 Distribution of Dynamic Figure art

Chaloupka's surveys properly defined the geographical boundaries of Dynamic Figure art. He recorded motifs from the Wellington Range 180 kms south to Birdie Creek and from the western most outliers of the Arnhem Land escarpment 200km east to the Cadell River (Chaloupka 1993a:106). However, the overwhelming majority of sites recorded by Chaloupka are along the residuals and outliers of Kakadu (Chaloupka 1984b:vii). His surveys of western Arnhem Land recorded on average 6.6 Dynamic Figure motifs in shelters that contained Dynamic Figure art (1984a:14). Currently, Gunn and Whear (2007) have reported the most southern Dynamic Figure site in Jawoyn

Country and Taçon and I have recorded Dynamic Figure sites further north than Chaloupka in the Wellington Range. However, Chaloupka's (1993a:106) contention that Dynamic Figure art is among the most spatially distributed rock art of the entire sequence is still correct.

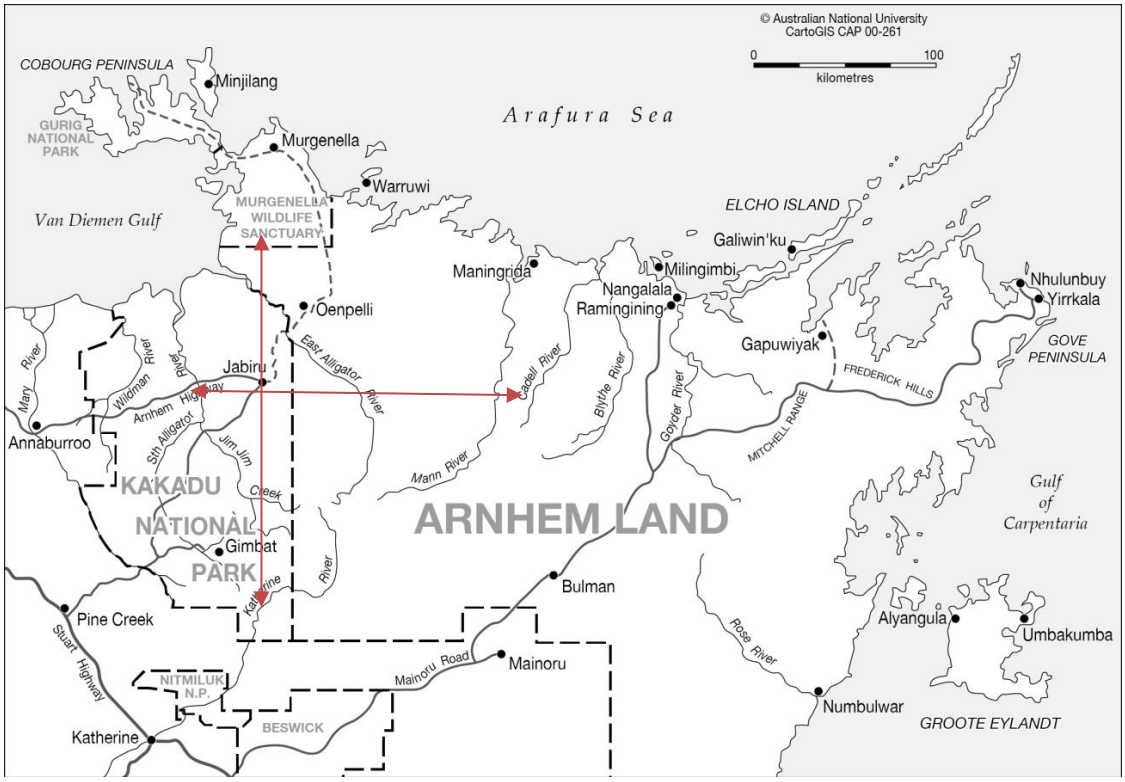


*Figure 3.7.Map of Arnhem Land show the approximate distribution of Dynamic Figure art (Source: CartoGIS CAP).*

Although, this research has a limited survey area and cannot refine the spatial distribution of Dynamic Figure art it does advance our understanding of the implications and significance of this distribution. This is achieved by considering the instances of art production and units of time spent painting, to consider if the distribution of Dynamic Figure art is uniform or focused at specialised places (see Chapter 6 and Chapter 9). This line of inquiry reveals a great deal about peoples' lifeways and ritual practice during the Dynamic Figure period (see Chapter 10).

### 3.5.3 Chaloupka's chronology of the Dynamic Figure style

Chaloupka concluded that there is significantly less stylistic variation in Dynamic Figure art compared to the subsequent styles, such as Simple Figures with Boomerangs or Yam Figures (see Table 3.1); despite, Dynamic Figures being painted in a relatively

large geographical area compared to these styles (Chaloupka 1984b:vii;1993a:106). He argued that Dynamic Figure art was one of the longest temporally continuous art styles of the region; X-Ray descriptive was the only style to exist over a longer phase although with considerably more stylistic variation (Chaloupka 1993a:106). This argument was based upon the extent of '…superimposition and variable states of weathering…' from the 350 known Dynamic Figure sites (Chaloupka 1993a:106). Furthermore, he argued these two observations supported his conclusion that the assemblage belonged to one cultural group of the semi-arid late Pleistocene (Chaloupka 1993a:106). His statistical analysis was not used to support his argument for homogeneity within Dynamic Figure art. It was therefore a priority of this research to determine a recording method, data set and statistical analysis (MCA) that could used to investigate the homogeneity of Dynamic Figure art.

To explain the limited variation that was present in Dynamic Figure art, Chaloupka proposed a subdivision of the style into four distinct phases. Each phase is defined by its variation from his *Classical* Dynamic Figures (Chaloupka 1993a:106).

| | |
|---|---|
| Phase 1 – Early Dynamic Figures | Largest of the phases with considerable similarity to the Classical Dynamic Figures in form. |
| Phase 2 – *Classical* Dynamic Figures | Examples 'typify' the style and express the most exaggerated movement of all Dynamic Figures. |
| Phase 3 – Late Dynamic Figures | Male bodies become 'stockier' with their arms and legs losing musculature and definition, now expressed as single lines. |
| Phase 4 – Final Dynamic Figures | 'Pointillistic' Dynamic Figures, depicted with dots around the body and in some examples dots instead of solid brush strokes. |

The titles: early, late and final, have been provided by myself for clarification as Chaloupka did not provide a specific term for each phase except the *Classical* Dynamic Figures (see Chaloupka 1993a:106).

Unfortunately, Chaloupka did not provide examples of these phases so it is hard to identify each without his own understanding of 'large' and 'stockier'. He also did not relate his statistical analysis of Dynamic Figure art to this phase level. I have argued that these phases do not exist in the Jabiluka assemblage and, therefore, the conclusions formed from them are problematic (see Johnston et al. 2017). In short, attributes associated with each phase were recorded in single Dynamic Figure scenes, Phase 4 was absent from the assemblage and the narrative of the scene often dictated the different

sizes of motifs. Also, no group of extra-large Dynamic Figure were observed (Johnston et al. 2017). By rejecting his phases, this research provides an alternative explanation for the variation in Dynamic Figure art by considering emic perspectives of art production and argues that artists used various attributes and forms within Dynamic Figure art to communicate to observers (Johnston et al. 2017).

### 3.5.4 Interpretation of Dynamic Figure motifs and scenes

Chaloupka argued that rock art could be analysed to understand the lives of people and culture at its time of production, he explained that rock art '…display[s] in some detail [the] physical, social and spiritual environment of the period' (Chaloupka 1984b:v). He proposed that rock art is, to a greater extent, a *construct* of peoples' minds, manifesting their interaction with their landscape and culture (Chaloupka 1984b:ii,1988:334). He further argued that rock art displays what artists wanted to communicate to each other and to their descendants (Chaloupka 1988:334).

Chaloupka's interpretation of Dynamic Figure art was influenced by his collaborative approach to the study of rock art. He argued that a researcher with the guidance of an initiated person could understand aspects of ancient rock art and working with senior Aboriginal men[2] interpreted a number of Dynamic Figure scenes (Chaloupka 1984a,1984b:i). He worked with a number of senior Aboriginal men from Arnhem Land region but relied upon certain senior individuals for much of his research; especially Nipper Kapirigi, a Badmardi man, who was his main guide for his Dynamic Figure art research (Chaloupka 1984b:i). This collaborative approach is demonstrated by his identification of the age of women in rock art. He controversially proposed that Aboriginal people identify the age of women in rock art by the size of their breasts; larger breasts representing older women, which he applied to Dynamic Figure art (Chaloupka 1993a:115). Ethnographic analogy is a viable line of inquiry for understanding rock art and archaeology; however, applying present knowledge to the deep past can be problematic without a considered methodology (see Section 4.5).

More broadly, Chaloupka argued that Dynamic Figure art shows how Aboriginal people saw themselves in this period. The predominance of human figures illustrated how people saw their 'everyday' activities and demonstrated the importance they placed upon themselves in their landscape (Chaloupka 1993a:106). Chaloupka identified male

[2] I am unaware of the extent to which Chaloupka collaborated with Aboriginal women during his research.

figures by their elaborate headdress and the activities they perform. Men are depicted with a specific set of material culture objects: hair belts, pubic fringes or skirts, necklaces, pendants, armlets, tassel and leg ornaments. They carry spears, a single wooded shaft often with barbs down one side, boomerangs, hafted stone axes and sticks. Men also carry various sized dilly bags around their necks and arms. The penis is rarely depicted and when it is it serves a sexual function (Chaloupka 1993a:106-108). According to Chaloupka (1993a:106), male figures depicted without headdresses, a rare occurrence, are examples of uninitiated men (Chaloupka 1984b, Site 28; see also Figure 3.8). He also suggested that the depictions of females are more realistic than those of males. A Dynamic Figure female is identified by the depiction of breasts but, according to Chaloupka, no apparel or decoration. They predominately carry digging sticks and dilly bags but occasionally carry spears, fire sticks and at one site a stone axe. The apparent overrepresentation of male to female figures was also recorded, using the sexual dimorphism identification schema above (Chaloupka 1984a:viii-ix). Chaloupka (1984a:viii-ix) interpreted the lines, often depicted emitting forth from figures' mouths, arms, spears, legs etc., to indicate actions and '… non visual sensor experiences…', thus demonstrating the complexity of Dynamic Figure scenes and motifs. Chaloupka observed the significance of Dynamic Figure scenes, indicated by overlapping motifs and the spatial relationships between them. He argued that this complexity was not evident in earlier art styles (Chaloupka 1988/89:335). A conclusion suggested by Brandl a decade before. He also noted the absence of children in the style (Chaloupka 1984b:ix).

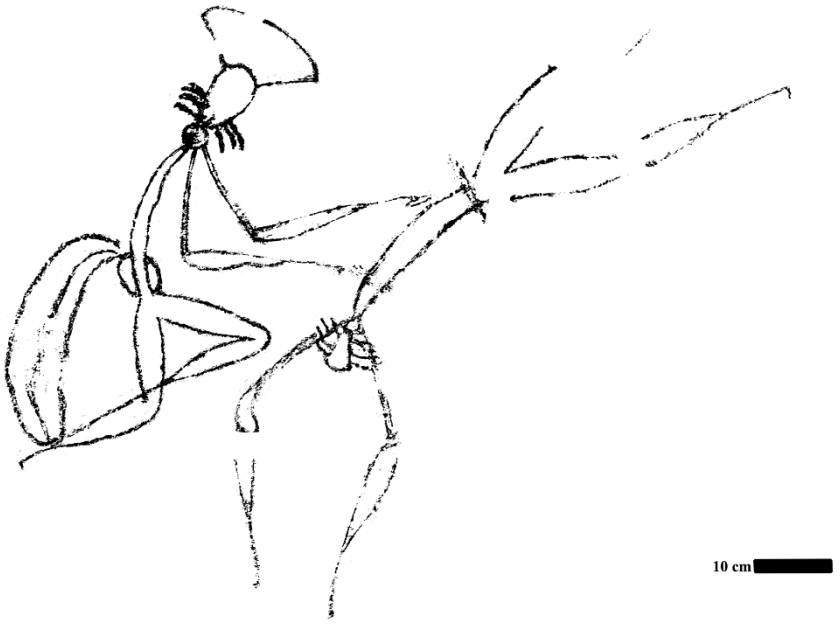


*Figure 3.8. Traced reproduction of I30030:56, showing a scene depicting initiated and uninitiated motifs (see also Chaloupka 1993a:230; May et al. 2017a).*

Concerning material culture and ritual, Chaloupka (1993a:110) suggested that in '… complexity and variety these three items [headdresses, pubic apron and pubic tassel] of apparently everyday forms of dress have no current Australian counterpart, although in some areas headdresses continue to be made for ritual occasion[s].' He proposed that the extravagant headdresses could have been constructed from woven hair and bark (Chaloupka 1993a:110). He presupposed that Dynamic Figure art is, or at least often is, a representation of human figures conducting economic and socio-cultural activities, instead of human figure motifs in a ritual time and space (Chaloupka 1993a:106; see also Chaloupka 1988/89:334, 1993b:92). In this research, I examine the extent to which Dynamic Figure art is associated with ritual practice and assess Chaloupka's statements about material culture and ritual. I argue that the *complexity and variety* of this material culture is better interpreted as an indicator that the subject of Dynamic Figure art is ritual; instead of ascribing this worn material culture to *apparently everyday* attire (see Chapter 9).

Chaloupka (1993a:112) also argued that therianthropes in Dynamic Figure art represent '…the first concrete evidence of mythogenesis in rock art'. Chaloupka argued that Brandl's 'kangaroo man', who accompanied hunters and was often depicted with enlarged male sexual organ, is an example of spirituality during the period of Dynamic Figure art production (Chaloupka 1993a:118-119). He also argued that it has the body of a flying fox, as its shape resembled that of other flying fox depictions in the region (Chaloupka 1993a:115-118). Lewis (2015 pers. comm.) drew a similar conclusion, and suggested the body resembles a cooked flying fox; however, it was Taçon and Chippindale who specifically focused on this figure and interpreting Dynamic Figure scenes, something I will discuss later in this chapter.

### 3.6. Lewis's Boomerang Period

Darrel Lewis is an archaeologist and historian who has recorded rock art across northern Australia, from Queensland to the Kimberley, but has said on many occasions that nothing is as special as the rock art of Arnhem Land (Lewis pers. comm. 2014; Figure 3.9). Lewis worked briefly with Brandl, who influenced Lewis's own archaeological method and bush craft. Although, he now focuses upon historical research (e.g., Lewis 2013), he has continued to research Arnhem Land rock art and Dynamic Figure art (e.g., Lewis 1997,2015,2017).

*Figure 3.9. Darrell Lewis at a rock shelter with Dynamic Figure art.*

Lewis (1988) developed his chronology of the Arnhem Land rock art assemblage from his focused surveys of the Kakadu region. He defined his sequence by technological periods and developed a third nomenclature system for the west Arnhem Land chronology. In his chronology, Dynamic Figures are within the earliest period; the Boomerang period, and form the first substantial rock art type of the region (Lewis 1988:80).

### 3.6.1 Lewis's chronology and methodology

Lewis's Boomerang period is named because of the prevalence of boomerangs in the art, which decline in his subsequent periods and are absent from the most recent rock art periods (Lewis 1988:80). Each period's nomenclature is categorised by the development and evolution of specific technologies depicted during that period, namely boomerangs, spear throwers and its prototype the 'Hooked stick' (Lewis 1988:54-55,111). He argued that as peoples' environment changed they began to cultivate different economic resources which prompted changes in their technologies and techniques to gather those resources. He argued this progression is represented in the rock art and that rock art is not simply a reflection of the environmental periods proposed by Chaloupka (Lewis 1988:93-95,102-103). He cautioned against the use of superimposition analysis but did employ this method to validate his proposed chronology (Lewis 1988:15-16,25).

Lewis, based on his methodology, questioned the existence of Chaloupka's Large Naturalistic Style. He argued that 'naturalistic' is a poor and problematic attribute from which to define a style and superimposition alone is not enough to allocate it distinctly before Dynamic Figure art (Lewis 1988:79-80). Brandl's pre-'early' Mimi art is encompassed into his Boomerang period, as he argued that it shares the attributes of the

Boomerang period's large animal depictions (Lewis 1988:56). He also argued that grass prints and thrown objects were produced throughout the sequence (Lewis 1988:216).

Lewis argued that the decline of the boomerang may have been linked to the warming climate of the region, increased rainfall and the resources (tree species) for making boomerangs diminishing (Lewis pers. comms.). In short, he suggested that the tree species that people had made boomerangs from during the Boomerang period did not survive the estuarine inundation of the Arnhem Land in the Holocene, thus they became less common in the art as they could no longer be made (Lewis 1988:88). However, as he stated:

> '…neither the antiquity of the boomerang period of rock art nor the timing of the boomerang's disappearance from Arnhem Land art can be deduced from the subject matter of the period.' (Lewis 1988:88).

Ethnographic evidence details that Arnhem Landers would trade boomerangs from central Australia as they could not make them, but still needed them for ceremonies and other cultural purposes (Brandl 1988:173). Also, boomerangs were recorded ethnographically in Southern Australia into the recent period and it's unlikely that changing hunting tactics alone would have ceased boomerang production as flora densities are comparable between regions. Therefore, boomerangs could have still been used as an effective hunting weapon in Arnhem Land during the Holocene and their absence in the later rock art record doesn't appear to be solely influenced by suddenly becoming an ineffective hunting weapon (Lewis 1988:88).

### 3.6.2 Analysis of the Boomerang Period

Lewis (1988:91-92) hypothesised cultural boundaries of the Boomerang period through his analysis of environmental data. As noted, he proposed that boomerang production is indicative of a semi-arid environment, this he contrasted to the clan boundary maps developed in the 1970s, which suggested that Aboriginal territories are larger in areas with less rainfall, i.e. central Australia, than those with higher levels, i.e. Arnhem Land. He cited Birdsell's (1953) study of hunter gather group boundaries, socio-economic territories and rainfall as evidence. Lewis argued that the former paradigm is represented in the rock art by the wide spatial distribution of Dynamic Figure art and the homogeneity of the style across the region (Lewis 1988:91-92). Therefore, Dynamic Figure art's homogeneity suggested fewer cultural groups to contemporary Arnhem

Land. My critique of this hypothesis is the same as that of Chaloupka's; that is, the homogeneity of the Dynamics Figure art has not been demonstrated in a methodologically reliable analysis. Both arguments rest upon observations of motifs at select sites and not the whole assemblage or via a rigorous statistical method.

Fully comprehending the homogeneity, or lack thereof, of Dynamic Figure art is beyond the scope of this thesis and could only be properly ascertained with a major pan Arnhem Land study with numerous sites. However, this research addresses part of this broader question by considering if a regional stylistic variation exists in the Dynamic Figure art of Jabiluka. This systematic study of one area will establish if one or more typical Dynamic Figures exist which in the future can be contrasted with motifs from wider Arnhem Land to ascertain the presence of regionalism in Dynamic Figure art. To this end, Lewis noted that regionalism in the style may exist, noting some difference between the west Alligator and Cadell rivers; however, he argued that he had not recorded a large enough assemblage to form a conclusion (Lewis 1988:88). He did demonstrate the existence of regionalism in later art styles, first in the subsequent 'Hookstick' period, which he linked to cultural requirements for groups to indicate their territories and smaller information networks (Lewis 1988:45-49, 86-87).

### 3.6.3 Interpretation of Dynamic Figure scenes

Lewis interpreted few of the Dynamic Figure scenes he recorded as part of his research, following Brandl's caution of interpreting rock art from the distant past. He identified certain scenes, Figures 29, 36 and 37 for example, as most likely depicting ritual practice and mythic narratives, by comparing these depictions to more recent ethnographic descriptions of rituals performances (Lewis 1998:190-191; see Figure 3.3 and Figure 3.10). Lewis suggested that Figure 3.3, the snake scene first recorded by Brandl (1988:47), may provide evidence for the '… continuity of the ritual association of snake and humans in Aboriginal cosmology' (Lewis 1988:191).

*Figure 3.10. Following Lewis (1988:183, Figure 29): Depiction of a ritual performance or mythic narrative in Dynamic Figure art, the scene depicts a motif grabbing the tail of a macropod and being dragged along while surrounded by various fish.*

### 3.7. Taçon and Chippindale's revised chronology of western Arnhem Land

Paul S.C. Taçon and Christopher 'Chips' Chippindale proposed a further revised chronology of the western Arnhem Land sequence; of concern to this thesis, are their 'Middle' and 'Old' periods (Chippindale and Taçon 1998). Their research was drawn from surveys of the Mount Brockman massif, Twin Falls area and Deaf Adder Creek (Chippindale and Taçon 1993; 1998; Taçon and Chippindale 1994). However, their largest contribution to the study of Dynamic Figure research is their interpretation of scenes (Chippindale et al. 2000; Taçon and Chippindale 2001a). They discussed and explored to what extent information depicted in Dynamic Figure art can inform about the culture that produced them.

Taçon and Chippindale's research at Mount Brockman and Twin Falls produced the 'Old' and 'Middle' phases of the Arnhem Land sequence, which they argue largely confirmed Chaloupka's chronology (1993a). However, like Lewis (1988:79-80), they do question Chaloupka's Large Naturalistic style, which they suggested may not be a style as such but a convention used throughout the sequence, particularly in the Yam style (Chippindale and Taçon 1993:36-37). They also conclude that there are no depictions of humans in this Large Naturalistic style; therefore, in their sequence Dynamic Figure art contains the first depictions of humans in Arnhem Land (Taçon and

Chippindale 1994:214). Their other critique is the placement of grass prints, hand prints and thrown objects at the beginning of the sequence, which they argue could also have been created throughout the chronology, an argument also made by Lewis (1988:216).

In their chronology, Taçon and Chippindale emphasised that rock art styles were painted concurrently instead of progressively as Chaloupka proposed (Chippindale and Taçon 1988:107; Taçon and Chippindale 1994:215*).* They also placed Dynamic Figure art as the first rock art style of their 'Intermediate' phase suggesting that it came after a break in rock art production (Chippindale and Taçon 1988:107). This placement more closely associated Dynamic Figure art with Post-Dynamic Figures, Mountford Figures, Simple Figures and Yam Figures (Chippindale and Taçon 1988:107; Taçon and Chippindale 1994:215, see Table 3.1). This placement suggests that after Dynamic Figure art, rock art production became progressively regional as styles are painted concurrently. The placement of Dynamic Figures in the 'Intermediate' phase is sequentially equivalent to the previous researchers.

Chippindale and Taçon (1993) offered a further consideration of stylistic rock art chronologies in Arnhem Land, noting how few motifs conform to the proposed stylistic criteria. In their study, only 35% and 18% of the rock art figures at Mt Brockman and Twin Falls, respectively, could be placed within existing chronological frameworks (Chippindale and Taçon 1993:38, 48-56, Tables 1 and 2).

### 3.7.1 Taçon and Chippindale's superimposition method

Taçon and Chippindale applied a superimposition matrix methodology — a Harris matrix — to develop their chronology. This method was originally used to determined 'complex stratigraphic relationships' in excavated sites (Chippindale and Taçon 1993:35; Harris 1989). The process involved recording each individual superimposition to determine if motif A is over motif B. Each relationship is recorded in relation to the next motif, C, D, E, and so forth until a superimposition matrix is formed (Chippindale and Taçon 1993:34-35, Figure 3). They argued that they overcame the issues of determining superimposition by recording each stroke of each motif, and thereby constantly reassessing the layering of the painted surface (Chippindale and Taçon 1993:34-35).

Initially in this study, I had planned to conduct a similar superimposition analysis of a substantial Dynamic Figure art site in Jabiluka; however, few sites had numerous superimposed Dynamic Figure motifs to warrant this type analysis. Although possible

with few superimpositions, the accuracy of this method relies upon numerous superimpositions.

Discussed, in some detail above, is the relationship between technology and fauna of Dynamic Figure art and a semi-arid Arnhem Land environment. This relationship has been used to associate Dynamics Figure art to the late Pleistocene or early Holocene period. Association of Dynamic Figure art to this period has been supported by each chronological sequence developed. However, Taçon and Chippindale proposed further support for this dating paradigm by considering depictions of fighting and conflict in different rock art styles. They recorded an increased frequency of motifs depicted in fighting scenes from Dynamic Figure art to Simple Figures art (Taçon and Chippindale 1994). They argued that this increase could represent the changing nature of conflict as the rising sea level was constricting available land for cultural groups; therefore, people diversified their art to mark social difference and depicted the conflict that resulted from these differences. They argued that the complex uses of fighting and punishment, known to contemporary Aboriginal people and from ethnographic sources, is represented in Dynamic Figure art and that the constricting of land and regionalism was not represented in this art (Taçon and Chippindale 1994). Their argument built upon Lewis's (1988:80-86) hypothesis that the 'Hooked stick' period's regionalism is indicative of land and space pressures; particularly, northern cultural groups moving south as sea levels rose and available land decreased.

### 3.7.2 Interpretation and methods of interpreting rock art

Chippindale et al. (2000) argued that the antiquity of Dynamic Figure art indicates that it belongs to a pre-Rainbow Serpent Aboriginal mythology[3] and, potentially, people with a considerably different 'world view'. Therefore, ethnographic evidence is not solely suitable for interpreting motifs or scenes and should only be used as a guide. However, they argue some interpretation of motifs and scenes is possible and a valuable line of inquiry to understand Dynamic Figure art (Chippindale et al. 2000:69). They concede that this is problematic, citing Davidsons' response to their own work who questioned if one, so removed from a particular culture, can identify an emu motif as a representation of an actual emu, the emu people or the emu clan (Taçon and Chippindale 1994:235). They argue Davidson's critique is overcome through *informed*

[3] The Rainbow Serpent is a major mythological figure in northern Australian Indigenous religion that is present in early rock art (see Taçon 1989a).

and *formal* methods and a focus on recurring scenes with consistent attributes (Chippindale et al. 2000:69-70). They define informed as their own insights from ethnographic research, personal experience working with Aboriginal people and rock art for many years (Chippindale et al. 2000:94). They define formal as traditional archaeological methods of investigation, for instance colour, form and fauna identification (Chippindale et al. 2000:94).

In this way, they identify certain Dynamic Figure art scenes as manifestations of altered states of consciences (ASC), comparing recurring scene attributes and recorded experiences of ASC in contemporary peoples. This hypothesis they link to the Arnhem Land mythology of 'Clever Men' (Chippindale et al. 2000:78-94, see also Elkin 1994). The ability to develop a methodology to test and validate this interpretation is problematic (but see Lewis-Williams 2002; Lewis Williams & Pearce 2005); therefore, it is not rejected but will not be attempted as part of this research. However, they also not that ASC may not be the best interpretation of these scenes (Taçon and Chippindale 2001a) This research is informed by aspects of their formal methodology, specifically considering recurring elements, as described below.

Chippindale et al. (2000:70) argued that therianthropes, particularly the 'Kangaroo man', are figments '…of the mind…' and, to an extent, Dynamic Figure humans are of the 'material' world. Therefore, analysis of the 'kangaroo man', and therianthropes like him, can be used to investigate aspects of the artist's culture at that time. They link these motifs to Aboriginal mythology and creation stories and suggest that the kangaroo man may be a precursor to the Rainbow Serpent who is also depicted as a therianthrope in later art styles (Taçon and Chippindale 2001a:191-192,202).

Taçon and Chippindale (2001a) provided an overview of the different Dynamic Figure therianthropes. They identified a macropod, flying-fox and a bird headed motif each with an individual collection of attributes, e.g. 69% of flying fox figures have male genitalia, while 97% of macropod figures have no sexual features (Taçon and Chippindale 2001a:191-192). This type of formal analysis provides a testable statistical baseline to consider the questions about Dynamic Figure art like Chaloupka (1993a); however, without an accompanying systematic recording program it still cannot be used to test for regionalism in Dynamic Figure art.

Taçon and Chippindale's interpretations of Dynamic Figure art scenes and motifs demonstrated the amount of information contained within this body of art and how it may inform us about the people who created it and how they depicted their world.

### 3.8 Haskovec's revisit to Mount Gilruth

Ivan Haskovec worked for Kakadu National Park and conducted numerous surveys of rock art sites inside the Park's boundaries. He, with his partner and archaeologist Hillary Sullivan, conducted a research project to record all instances of rock painting by a known rock artist, Najombolmi (Haskovec and Sullivan 1989). Haskovec (1992) presented a further revised chronology after his own research at Mount Gilruth, revisiting the two sites that Chaloupka based his chronology upon. He questioned Chaloupka's analysis of the superimposition of both panels and argued that Chaloupka's Large Naturalistic style did not exist (Haskovec 1992). The quality of this field research and methodology were severely critiqued by Lewis (1996). During the same field research, Haskovec identified an alternative pre-Dynamic Figure art style, his Archaic style, consisting of thick red human silhouettes outlined in white (Haskovec 1992). This style has not received any subsequent focus by Haskovec or other researchers and according to Lewis (1996) likely does not exist.

### 3.9. Methods compared

The methodical approaches to investigate Dynamic Figure art have been mentioned previously; but it is useful here to summarise each and how they apply to this research. Each of the researchers detailed above employed all the methods mentioned to develop their chronology; for example, Taçon and Chippindale also considered changes in material culture not just superimposition.

However, Lewis, and to a lesser extent Brandl, defined their sequences through the technology and material culture which they observed and contrasted this with environmental change in northern Australia. Alternatively, Chaloupka, Taçon and Chippindale and Haskovec focused upon superimposition analysis — rock art stratigraphy — which they contrasted with environmental change to identify periods and styles (Chippindale and Taçon 1993). The former considers what environment the depicted material culture would be best suited to; while the later, principally Chaloupka, considers what material culture would be indicative of an established environmental narrative.

### 3.9.1 Material culture periods

Lewis and Brandl chose to focus upon material culture as the key indicator of artistic periods, as it is the most accurate method to determine the stylistic parameters of an assemblage of rock art (see Lewis 1988). The boomerang period is a prime example of this methodology. A distinctive material culture object(s), a boomerang, is depicted, which indicates that a group of motifs belong to the same temporal period, a time when people used and depicted boomerangs. These motifs are used to create a collection of stylistic attributes for this period; for example, in Dynamic Figure art the headdress and elongated legs. These attributes can be used to identify motifs that stylistically fit into this period, even without the depiction of the specific material culture objects, the boomerang. The next period is identified by the change in material culture object(s), the 'Hookstick', and new stylistic attributes that are associated with those motifs are developed (Lewis 1988:13-14).

This type of analysis is only possible in regions, like western Arnhem Land, where an abundance of rock art exists, and it has a long enough antiquity that technology and material culture *distinctly* changes over time. It also requires that a significant part of the rock art production in each temporal period is anthropomorphic. Art periods dominated by depictions of fauna could not be included in this method. These observations are highlighted to demonstrate this method's limitations and not criticized its validity.

However, concerns do arise from this method. It assumes that tools and weapons e.g. boomerangs, are among the most significant and, to an extent, prevalent material culture associated with an art style. This is not true for Dynamic Figure art, where worn material culture, specifically the headdress, is more prevalent and *significant* to the style (see Johnston 2017; May et al. 2017a). It would be problematic to incorporate this etic perspective of the west Arnhem Land chronology, as headdresses are not unique to any period of the past and it would be problematic to identify a representative group or type of art motif with headdresses as its defining feature. However, if boomerangs are used as the defining attribute to develop the style's form parameters; it may not represent a non-biased statistically accurate sample group of motifs. To clarify, motifs with boomerangs may not represent the whole spectrum of Dynamic Figure art. This could be particularly problematic if apprenticeship and ownership rules demonstrated by Taylor (1996) in recent art practices existed in the past, as only a small group of artists may have painted boomerangs with their motifs. This does not invalidate Lewis's

boomerang period and its definition of a Dynamic Figure but highlights how this research is using aspects of his methodology to research Dynamic Figures art.

### 3.9.2 Superimposition

Chaloupka's chronology was developed from his analysis of the superimposition of motifs and an environmental narrative of Arnhem Land's past; this environmental narrative will be discussed separately below. Chaloupka identified the limitations of his superimposition dating conclusions - one cannot determine if the over painted motif is a week or several thousand years later than the one below. Therefore, it is difficult with this methodology to attached absolute dates to styles or motifs. Notwithstanding, he argued that depictions of animals, specifically fish, bird and extinct mega fauna species, and material cultural, particularly boomerangs, demonstrate how Aboriginal people have adapted to the changing environment of Arnhem Land (Chaloupka 1988:330-331). This is a reversal of the previous methodology where superposition is secondary to material culture.

Lewis (1988:15-16,25) and Brandl (1988:172) argued that comprehending the superimposition layers of rock art is problematic at best and that weathering and other external factors can influence the state of the pigment on the rock face for contemporary viewers. This is not to suggest that they never observed superimposition but that it should not be used as the basis of determining a rock art chronology. Taçon and Chippindale, as discussed above, applied a superimposition matrix methodology to develop their chronology (Chippindale and Taçon 1993:35). They argued by recording specific densely superimposed sites and each stroke of each motif, they could reduce the subjectiveness of superimposition analysis and arrive at an accurate result.

Haskovec's 'revisit' of Mount Gilruth, a reassessment of the two panels that Chaloupka's chronology is based on, demonstrates the key issue of superimposition analysis. He argued that Chaloupka incorrectly identified Large Naturalistic Figures as being superimposed by Dynamic Figure art (Haskovec 1992). The truth is impossible to determine as both researchers have stated their observations of superimposition as fact. This highlights the subjectiveness of superimposition analysis.

For this reason, superimposition may be used with caution to determine a sequence in Dynamic Figure art if suitable sites present themselves in the future.

### 3.9.3 Environmental periods

Relating the environmental changes that have occurred in Arnhem Land during human occupation to the rock art record has been the goal of many researchers (Jones and Negerivich 1985) and Chaloupka (1984a) was the first researcher to specifically align his chronology with environmental phases. Chaloupka divided his sequence into three environmental phases: pre-estuarine, estuarine and freshwater; these reflected the environmental changes determined from excavations in Arnhem Land and relate to the progression from Pleistocene to Holocene (Chaloupka 1984a;1988/89:330-331). According to Taçon and Brockwell (1995), the pre-estuarine is the period after 20,000 years BP and before ±8,000 years BP. Arnhem Land was a larger land mass, had a semi-arid environment and was dominated by terrestrial fauna, according to the rock art. The estuarine period is after ±8,000 years BP and before ±4,000 years BP, it is characterised by rising sea levels, increased rainfall, a smaller Arnhem Land and saltwater inundation. Marine fauna and fish become more prominent in the rock art. The fresh water period is post ±1,500 years BP, after a slow transition with increased rainfall and the development of a monsoonal weather system. Freshwater fish species dominate the rock art, although terrestrial fauna is still depicted (Chaloupka 1984a; see also Taçon and Brockwell 1995). These phases also provided the relative dates for Chaloupka's styles. Human figures were painted in all periods.

Lewis used the same environmental data to analyse the attributes of motifs and applied this to the societies that produced rock art; specifically, he concluded that the correlations between environment and homogeneity of art in the Boomerang period equated to larger cultural territorial boundaries than in the present (Lewis 1988:80-86). However, he questioned Chaloupka's environmental phases. He argued that one cannot distinguish between an estuarine and freshwater period because the fish species that Chaloupka cited as indicators can and did live in salt and fresh water, for this Lewis cited Taçon (1987). He further argued that Chaloupka's date for the emergence of X-Ray art and the appearance of stone spear points are too early (Lewis 1988:75-77). Therefore, Lewis concluded that Chaloupka's three phase distinction cannot be made from the rock art evidence. However, Taçon argued in his own thesis that a distinction can be made between estuarine and freshwater periods in the rock art, as certain fish species are indicative of salt and fresh water (Taçon 1988, 1989a). In summary, the contention rests upon if flora and fauna are good or poor indicators of specific environments (estuarine or freshwater); most researcher except that floar and fauna can

indicate drastically different environments (swamp vs semi-arid). Therefore, this debate will be set aside in this research as the earlier pre-estuarine/estuarine distinction is universally accepted by each researcher and that is the proposed time of Dynamic Figure art production.

The current research concludes that Dynamic Figure art is a product of a cultural group that occupied a semi-arid environment. This is drawn from the dominance in depiction of large macropods and emus compared to fish as both fauna species are more prevalent in a dryer climate than contemporary Arnhem Land.

### 3.10. Dynamic Figure art fauna

Researchers have spent less time discussing the depictions of fauna in Dynamic Figure art than the human figures, but an exception is Lewis's (2015) discussion of the distinction between eels and catfish. Chaloupka (1984a:25) observed that the majority of fauna depicted in Dynamic Figure art are macropods, of which the northern black wallaroo is the most frequently depicted. Although he provided no explanation to how he identified this wallaroo from other species of macropod (e.g., Figure 3.6). He also identified emus, echidnas, rock possums, Thylacines and fish and bird species as well as fewer examples of Tasmanian devils, numbats, snakes, long neck turtle, lizards and a major skink (Chaloupka 1984a:25). He did not clarify if these fauna types are depicted in scenes with Dynamic Figure motifs or in isolation, or the specific distinguishing features that identified the species when painted in the Dynamic Figure style. Brandl (1988:167,173) observed that the depictions of macropods, 'kangaroos', were often larger than human figure motifs, that animals had no internal X-Ray features as the artists focused upon '…representing the surface of the subjects naturalistically'. More broadly, Brandl (1980:8,10) argued that painters across the sequences have 'emphasis[ed] the distinguishing features' of fauna; however, he found his contemporary informants would not base their identification of Dynamic Figure fauna upon any one feature or attribute. He concluded that anatomical features are valuable but not a conclusive identifier of faunal species (Brandl 1980:13). Lewis (1986,2015,2016) drew the same conclusion in his discussions of the identification of megafauna species.

An attribute common in Dynamic Figure human figure motifs and fauna is the 'crossed legs perspective' (Lewis 1988:42; Figures 54-60 also see Brandl 1988:173). This is where four lines are drawn to form the front and back legs while the subject is in a

profile perspective. However, in a strictly realistic depiction one or two of the lines of the back leg would be obscured and not drawn. This manner of depiction it not exclusive to the legs of motifs but is exclusive to Dynamic Figure art (Lewis 1988:44-45, see Chapter 7 and Chapter 9).

### 3.11. Dynamic Figure art stencils

Brandl (1988:167) was the first to observe a connection between stencils, particularly hand and boomerang stencils, and specific rock art types within his chronological sequence. He argued that material culture stencils and specific hand forms were related to his 'early' Mimi Figures (Brandl 1988:167; Figure 3.11).

*Figure 3.11. Panel from site I30030 showing boomerang stencils, 3MF and open hand stencils that were most likely produced during the Dynamic Figure period. Note the Dynamic Figure motif below the boomerang stencil on the left.*

The subsequent researchers have confirmed this relationship (Chaloupka 1984b,1993a; Lewis 1988; Taçon and Chippindale 2001a). Chaloupka (1984b, 1993a) placed stencils, along with grass prints, among the earliest forms of rock art still present in these shelters of Arnhem Land. He also argued that boomerangs and two and three middle finger closed (2MF and 3MF) stencils were specifically related to Dynamic Figure art (Chaloupka 1984:viii):

> The actual boomerangs which the hunter of this style [Dynamic Figures] used appear in sites as stencils, documenting their shape and dimensions. In a number of instances the boomerangs are placed in a compositional context with hand stencils of both the open hand and the three middle fingers closed convention (3MF). In this latter stencil the three middle finge[r]s are held tightly together while the thumb and the little finger are extended. The two types of hand-stencils were also used as integral components of the figurative compositions of this style. Although the open hand stencil continued to be used throughout the subsequent styles and periods, the 2MF stencils is unique to this art style. Stencils of spears, dilly bags, necklets and a hafted stone axe have also been recorded.

He found that Dynamic Figures were associated with 3MF stencils on 28 occasions in a study of 241 Dynamic Figure art sites (Chaloupka 1993a:114). Previously, he also argued that the 2MF stencil was only created during this period of art production (Chaloupka 1984:viii). Taçon and Chippendale (2001a:188-189) also found that the 3MF and boomerang stencils were associated with Dynamic Figure art. However, the practice of using artefacts as the subject of stencils does not appear to have been common (Hayward et al 2018). Taçon's (1989a:152) analysis of stencils from seven regions in western Arnhem Land revealed that of the stencils he recorded, only 2.1% were of material culture and all of those are from the northern sections of Kakadu.

Lewis argued that stencils form a significant part of his Boomerang period. He argued that not all stencils relate to this period but that the stencilled material culture assemblage demonstrates a significant connection between material culture stencils and Dynamic Figures (Lewis 1988:57):

> During the boomerang period the dominant weapons were the single-piece multi-barbed spear and the boomerang. Of the two, the boomerang was by far the most commonly stencilled. During later periods a 'hooked stick' and various forms of spear thrower became dominant weapons, yet only a single example of a stencil of one of these weapon types, a notched lath spear thrower, has been found (Figure 256). If, subsequent to the boomerang period, stencils were being produced in any quantity,

> then it is difficult to understand why stencils of 'hooked sticks' or of spear throwers should not be found today.

Even though boomerang stencils are strongly connected to Dynamic Figure art, there is no evidence that directly suggests that the practice of stencilling material culture has not continued until recently. Stencils of other material culture objects recorded indicate that the technique has been used, at least occasionally, in more recent times. For example, Lewis (1988:398) has recorded two long-notched lath spear throwers, a spear thrower type associated with recent rock art types; as well he referred to objects imported by Macassans and Europeans as having been stencilled in Arnhem Land (Lewis 1988:56). During the Mirarr Gunwarddebim project another spear thrower type was recorded that is morphologically similar to some artefacts recorded in ethnographic collections (see Hayward 2016a).

The systematic recording method of the Mirarr Gunwarddebim project is well placed to examine the association between stencils types and Dynamic Figure art, as it is possible to count how often certain stencils are recorded in the study area and recorded with Dynamic Figure art (see also Hayward et al 2018).

### 3.12. Headdresses in northern Australia

Headdresses form a significant part of the Dynamic Figure material culture assemblage. Headdresses were the most recorded material culture type and exhibited the most variation in Dynamic Figure art (see Johnston 2017). However, their prevalence in the rock art record is not paralleled in the excavated record and no headdresses have been recorded from excavated sites in northern Australia.

In Arnhem Land, headdresses are well document ethnographically and early researchers often recorded and collected examples (see May 2009; Berndt 1951a:170; Warner 1958:497-498; see also Welch 1996,1997 for a Kimberley comparison). Headdresses were made for various rituals and used during the formal ritual performance (e.g., Berndt 1951a:170-171) and Welch has argued that headdresses and ceremonial regalia in rock art scenes suggest that they likely depict ritual performance (Welch 1996,1997). Generally, the mythology, purpose and form of a ritual would dictate who and what type of headdress participants wore, and while certain ritual practices had a primary focus, e.g. initiation of young men, different parts of the ritual performance cycle could require different headdresses or the removal of headdresses (e.g., Fidock 1982; Berndt 1951b:45-46). As noted, Chaloupka (1993a:110) argued Dynamic Figure headdresses

could have been constructed from woven hair and bark, which is known ethnographically (e.g. (Berndt 1951b:45-46). Moreover, Warner (1958:294, see also plate VIB) recorded that each ritual had specific materials from which headdresses had to be constructed (see Figure 3.12). From my own conversations with people, headdresses are made less frequently in Arnhem Land today than in the past; however, they are still made for ritual performances (see Chaloupka 1993a:106).


*Figure 3.12. Aboriginal men preparing for a corroboree, near Darwin, 1942. Bob Kraack Collection (photograph courtesy of the Northern Territory Library).*

### 3.13 Gwion Gwion Figures and Dynamic Figures

The relationship between Dynamic Figure art and Gwion Gwion art (formally Bradshaw Figures) of the Kimberley has been noted and echoed by Arnhem Land and Kimberley rock art researchers alike (e.g. Chaloupka 1984b:55,1993a:118; Crawford 1968:82, 1977:357,369; Lewis 1988:84-5,93-5,104,111-12,1997; Schulz 1956:12; Taçon and Chippindale 2008:75; Travers 2015:274-276; Walsh 1994:55; Welch 1990:121-3,1993:25-7). The key similarities between these art styles are their artistic form, an elongated but precise human figure typically of red pigment, and their material cultural assemblages, specifically the boomerangs, single shaft spear and headdresses (Lewis 1997). Moreover, both types of human figures are depicted in scenes; however, Dynamic Figures tend to have more complexity in their scenes of activities while Gwion Gwion Figures have more elaborate material culture objects (compare Chapter 7

and Chapter 8 with Travers 2015). Both Dynamic Figures and Gwion Gwion figures are proceeded by less energetic human figure styles with new material culture, hooked sticks (Lewis 1997:14)

The similarities between Dynamic Figure art and Gwion Gwion art has also provided a data source to consider the cultural boundaries of northern Australia in the late Pleistocene. As Lewis argued:

> '…the similarity of art style [Gwion Gwions to Dynamic Figures] and content in both regions may be the result of an information network that extended between both regions, it does not necessarily follow that an individual or group in one region had direct interaction with an individual or group in the other, although this could have been the case.' (Lewis 1988:92)

Alternatively, Chaloupka speculated that a group of people who lived on the Arafura plain, the area that extended between and beyond Arnhem Land and the Kimberly, separated because of rising sea level inundation and developed similar yet unique art forms in their new landscapes (Chaloupka 1993a:118).

Both hypotheses present valid arguments and as Lewis suggested, and has continued to pursue, the answer will likely be found in the Victoria River District, the area between Arnhem Land and the Kimberly today (Lewis 1988:92). It is beyond the scope of this research to pursue either line of inquiry and the data from Jabiluka would not likely have produced results that could interrogate these research questions. However, it should be the aim of future research and by developing a more refined definition of Dynamic Figure art this thesis will be useful to this research endeavour.

### 3.14 Key questions developed from the literature review

The primary research question of this thesis is to establish what insights might be learned of past ritual behaviour from Dynamic Figure art. This has been developed from key conclusions and issues which I argue have arisen from previous studies of Dynamic Figure art. Taçon and Chippindale have discussed various interpretations of scenes and motifs and this research furthers their study by focussing upon each scene from a systematically recorded area, instead of the 'best' sites and scenes.

Chaloupka's survey, as well as later studies by Gunn, Taçon and myself among others, demonstrate that Dynamic Figure art is found across the entire plateau and many of the

furthest outliers. However, beyond observing its presence little research has examined where, in what densities and in what forms Dynamic Figure art takes over this area (but see Chaloupka 1993a:106; Johnston et al. 2017). This situation influenced the first of the subsidiary questions exploring how Dynamic Figure art is depicted in the landscape and what can be inferred of the Jabiluka area and the greater Arnhem Land Dynamic Figure province. Also pertinent to this investigation is the assertion of homogeneity within Dynamic Figure art, and the implications and insights of this attribute of Dynamic Figure art to understanding art production during this period (e.g., Lewis 1997).

Highlighted throughout the discussion of Dynamic Figure art is the significance and uniqueness of its material culture, in particular the headdresses. In contemporary Arnhem Land, and in historical ethnographic records (e.g., Berndt 1951b), headdresses are most strongly associated with ritual; therefore, ritual is the best context in which to investigate Dynamic Figure material culture. This line of inquiry, developed from this analogy, is examined within the second subsidiary research question concerning Dynamic Figure motifs.

The final subsidiary research question aims to explore insights into actual ritual activities and was informed by the significance placed upon Dynamic Figure scenes. These compositions are an opportunity to examine past ritual behaviours in such detail, with insights absent from other archaeological sources and rare elsewhere in the world during the late Pleistocene or early Holocene period (see May et al. 2017a). The investigation of these narrative compositions has provided great insights into past ritual behaviours of the people who created Dynamic Figure art.

### 3.15 Conclusion

This chapter has provided an overview of the research pertaining to Dynamic Figure art. It has defined its stylistic form, its spatial and temporal boundaries and highlighted the complexity of Dynamic Figure scenes. Through this discussion, I have also described the methodological approaches used to develop the western Arnhem Land rock art chronologies and analysis Dynamic Figure art. This review has indicated where this research will aim to expand our understanding of Dynamic Figure art and the people who created it. The research questions drawn from this literature review correlate with the research questions of this thesis, as follows:

- Does Dynamic Figure rock art provide insights into past ritual behaviours in western Arnhem Land?
    - Does the placement of Dynamic Figure rock art indicate the location of areas associated with ritual within a wider cultural landscape?
    - Are there ritual indicators associated with individual Dynamic Figure motifs?
    - Do Dynamic Figure narrative scenes provide evidence for actual (as opposed to imagined) ritual activities and is this evidence supported by historical ethnographic evidence?

In the next chapter, I discuss the theoretical framework of this thesis and describe how Dynamic Figure art can be used to explore each of the research questions.

# Chapter 4: Theoretical Framework

> *[Rock art] is arguably the best positioned to approach the ways in which archaeologically observed foragers thought and lived.*
>
> Sven Ouzman (1998:30)

## 4.1. Introduction

The theoretical frameworks employed in this study are ritual practice and information exchange, and both of their associated discourses have been influential on the methodology of this thesis. As noted, the universal structure of ritual practice provides the framework to examine the primary and subsidiary research questions: concerning places and landscape, motifs and material culture, and scenes and narratives in Dynamic Figure art (Section 4.4). However, I discuss ritual practice second in this chapter, as certain concepts and approaches need to be established before the ritual practice approach employed in this thesis, can be fully described. First (Section 4.2), I discuss style and information exchange theory and how rock art, or any material culture, is used to communicate messages to people. In the context of this study, information exchange concerns the effectiveness of Dynamic Figure art to communicate ritual information. Key to this discussion is style, both its definition and how it has been interpreted and used in rock art research and archaeology more broadly. Initially, this chapter outlines definitions of style employed in previous rock art research and how style has been interpreted in the past. This is concluded by examining the social and chronological implications of understanding style from an emic perspective and how it used in this thesis to examine Dynamic Figure rock art.

In the next section (Section 4.4), I discuss the ritual practice approach and the definition of ritual I employ in this research (see also Verhoven 2011:112). In this discussion, I outline and draw upon a structuralist theoretical framework which asserts that ritual practice has a universal structure through time and place. In order to discuss this framework, I outline its anthropological development and how this approach facilitates employing multi-vocal sources to examine the presence of ritual practice and its universal indicators. These indicators are outlined at the end of this section (Section 4.4.3) and form the headings for the first of the discussion chapters (Chapter 9). The last part of this chapter (Section 4.5) concerns ethnographic analogy. Here, I discuss the use

and limitations of ethnographic analogy in archaeological research and how I employ analogy in this thesis. Although, ethnographic analogy is vital to answering the final subsidiary research question concerning actual ritual performance and behaviour, it is also a significant source for investigating each research question and the association between Dynamic Figure art and ritual practice.

### 4.2. A history of style in rock art research

The concept and interpretation of style in contemporary rock art research is in flux. Since its conceptual inception style has undergone change; however, this trajectory is best described as branching, as opposed to linear, and the 'use of style' has depended upon the researcher, their school of thought and the focus of their investigation. In this section, I introduce style through a historical overview of its uses in rock art research; this, I believe, justifies specific project definitions of style, a concept suggested by Smith (1994).

Early rock art researchers defined style as a distinct manner or way of painting and understood style as a marker of peoples (Francis 2001). It was used to distinguish particular rock art traditions from each other, such as Palaeolithic versus post-Palaeolithic rock art in southern Europe (e.g., Breuil 1920), or differences between 'hunter-gatherer' and 'farmer' rock art in northern Europe (e.g., Gjessing 1936,1939). In turn, style was used to construct chronological phases within specific rock art traditions (e.g., Breuil 1952,1955-1975; Hallström 1938; Leroi-Gourhan 1967). This theoretical understanding of style is still being employed by researchers to develop and critique rock chronologies and sequences (Francis 2001; Domingo Sanz and Fiore 2014).

However, the concept of 'style' has been widely debated within archaeology, material culture studies and social anthropology (Binford 1989; Carr and Neitzel 1995; Conkey and Hastorf 1990; Hodder 1982b; Layton 1991; Sackett 1982,1985,1986; Weissner 1983, 989,1990) and different schools of thought apply different notions of style in their research. In traditional culture history approaches to archaeology (Trigger 1989), stylistic change was generally treated as indicative of chronological change (e.g., Breuil 1952; Hallström 1938), an approach that lingers in some rock art research (see above). In the late 1970s and early 1980s, archaeologists began interpreting style as active phenomena and representing emic social engagements oppose to etic passive adaptions to environmental conditions (e.g. Binford 1972). For example, Conkey and Hastorf (1990) argued that style should not be interpreted as 'peoples' of chronological phases

but rather as a context of doing things. In later formulations, the notion of style came to feature in more conscious social and ideological uses of material culture through the notion of 'symbols in action' (Hodder 1982b). The latter has often been discussed in relation to theories of information exchange, with deep roots in various forms of structuralism (e.g., Wobst 1977; see also Clegg 1977b; Conkey 2001; Leroi-Gourhan 1967; Lewis-Williams 2002; McDonald 2008; McDonald and Veth 2011; Smith 1989,1994). What has developed is research with applications and interpretation of style as either etic or emic.

Rock art research that wholly interprets style as an etic phenomenon has been demonstrated to be problematic. When direct Accelerator Mass Spectrometry (AMS) radiocarbon dating of rock art was introduced in the 1980s, researchers rapidly showed that what had been thought of as established rock art chronologies born of stylistic criteria now had to be reconsidered (e.g., Lorblanchet and Bahn 1993). While there were some agreements between the established chronologies and the new absolute ages, there were also numerous disagreements. One possible reason for such inaccuracies is that older rock art influences the creation of new art (iterative art production), a phenomenon that is evident in both past and contemporary artworks in western Arnhem Land (see May 2008; Taylor 1996).

However, interpreting style exclusively from an emic perspective is also problematic; stylistic differentiation can represent chronological change (Roe 1995; see also Layton 1991). In western Arnhem Land, Taylor (1996) has demonstrated how stylistic traits can be the result of specific individuals or artistic groups working closely together; therefore style does represent 'peoples'. Similarly, it is possible that rock artists produced numerous paintings in a life time that could constitute an entire stylistic phase when view by observers from a great temporal distance (e.g., Najombolmi, see Chaloupka 1993a; Haskovec and Sullivan 1989; Taçon and Chippindale 2001b).

In summary, style is still employed as an etic concept to investigate rock art in Australia; often because of the inability to accurately date the rock art, this includes Dynamic Figure art. Following previous researchers within Australia, I have employed a definition and interpretation of style intended to meet the aims of this thesis which I present below; a definition that encompasses both etic and emic perspectives in order to investigate ritual practice and Dynamic Figure art.

### 4.2.1 Style, Dynamic Figures and developing research specific definitions

In her study of rock and bark paintings, Smith (1994:34) defined style as '…the personal and/or group expression of visual communication through created forms…' Her definition developed from her understanding of style as an active emic phenomenon and she argued that this definition of style suited her research field and data sources (Smith 1994:34). She argued that each archaeologist should create their own definition of style, bound and used within their specific research area, and which can answer their specific questions.

Brady (2005) provided a specific example of this, as his specific definition of style differs from Smith's, yet he interpreted style within a similar framework. He defined style '…as a way or manner of doing things'; this, he explained, was purposefully 'broad' to account for both the form and technique used to create material culture (Brady 2005:61). His definition could be encompassing of emic and etic theoretical understandings of style and has application wider than Torres Strait rock art, where his study was based. Crucially, he argued that his data source, Torres Strait rock art, acted to focus and narrow his definition of style. In the cases of Brady and Smith, both defined style to suit the context of their study and both interpreted style as an active phenomenon, each employing it in a similar manner to understand the past.

As discussed in Chapter 3, most of the previous research concerning Dynamic Figure art has been chronological studies, treating style as a marker of peoples, and placing this style within a sequence of Arnhem Land rock art (e.g., Brandl 1988:72; Chaloupka 1977,1984b:iv,1988,1993a; Chippindale and Taçon 1993,1998; Haskovec 1992; Lewis 1988). In these instances, the researchers have interpreted style at an etic phenomenon. Smith (1994:8) summarised this approach as researchers interpreting style '…to be a fundamentally passive reflection of inherently static archaeological entities…' where '…change emanate[d] from outside of the system' and equates to a replacement of one defined social group with another.

Chippindale and Taçon (1993) also created their own conceptual definition of style but also rejected the use of the term; again they suggested the need for specific definitions. They explained that the broad definitions of style that existed included aspects less significant than others for examining 'chronological meaning', the focus of their study (Chippindale and Taçon 1993:39). Therefore, as Smith argued, they created a specific research term relevant to their study, which they termed *manner of depiction*. Despite

this definition being similar to Brady's, their study interpreted *manner of depiction* as principally having chronological implications more than representing social or communicative aspects of rock art.

Lewis (1988) applied an adaptive interpretation of style in his examination of Arnhem Land rock art. First, he defined style as an etic marker and employed style to develop his chronology (Lewis 1988:8); however, he also followed Gamble (1982) to explore some of the emic implications of his observations (Lewis 1988:87). He argued that rock art represented social boundaries and identified the transition from homogeneity of the Boomerang period (Dynamic Figure period) to the heterogeneity of the subsequent Hook Stick period as an example of changing social boundaries (Lewis 1988:93-94). He argued that rising sea level contributed to pressures upon Arnhem Landers for resources and artists began to mark smaller socially defined areas through their rock art; these became regional styles (e.g., Lewis 1988:101-102). In this way, Lewis also employed his own combined etic and emic definition of style.

In summary, the definition and interpretation of style is fundamentally linked to the focus of the study. Following this, the discussion of style in this section was not exhaustive but has focused upon concepts and ideas pertinent to this research. The definition and interpretation of style developed and employed in my work is presented in the following section.

### 4.2.2 Definition and interpretation of style for this research

In this thesis, style is defined as *a manner of depiction that comprises a specific collection of forms and attributes*. This definition is intended to be inclusive of a broad interpretation of style and its implications for understanding the past. Style is interpreted as an emic and active phenomenon where the specific *collection of forms and attributes* observed are the specific choices of artists in the past. An emic interpretation is important as the primary question of this thesis concerns ritual practice which involves a range of active processes on the part of participant (Section 4.4). Therefore, what is depicted is the result of active choices made by an artist or artists.

The passive interpretation of style is also contained within this definition. As Wobst (1977:317) argued, style cannot be understood as devoid of all chronological significance. Therefore, this thesis assumes that most likely the vast majority of Dynamic Figure art was painted during the *Dynamic Figure period*. As will be discussed below (Section 4.3), for rock art to be an effective communication medium it

often conforms to formal stylistic boundaries. This does not negate artists painting Dynamic Figure style motifs outside this period to achieve undeterminable outcome.

Pertinent to defining the Dynamic Figure style is an observation by Chippindale and Taçon (1993:38); 'The Dynamic manner is so unusual and full of character that we, and colleagues, feel we can identify Dynamic figure from very slight surviving fragments.' Dynamic Figure art has been well defined via etic perspectives into a sequenced period; and this thesis, by applying an emic interpretation of style, explores what Dynamic Figure art indicates about ritual practice and society in that period.

### 4.3. The use of style and information exchange theory

Since it was codified by Wobst (1977) in *Stylistic behaviour and information exchange,* information exchange theory has been employed by many archaeologists to explore the relationships between style and people in the past (e.g., Brady 2005; Conkey 2001; Lewis-Williams 2002; McDonald 2008; Smith 1989, 1994; Tilley 1991). This section does not aim to comprehensively list each of these studies and their strength or weakness but indicates which specific studies have been influential upon the framework and methodology of this thesis. As noted in Chapter 1, many studies that developed a testable conclusion in a European context have been applied to an Australian case study through information exchange (e.g., Gamble 1982 in Lewis 1988). First, this section discusses Wobst's (1977) information exchange theory and how it is applicable to this study. What follows are summaries of two key applications of information exchange theory that informed aspects of this study, McDonald (2008) and Travers (2016).

#### 4.3.1 Information exchange theory

Wobst (1977:321) defined style as the '…formal variability in material culture that can be related to the participation of artefacts in processes of information exchange'. In this definition, he contended that the style of a material culture object signals information to observers from that object's creator. Furthermore, the creator or signaller and the recipient (observer) of the information contained do not need to occupy the same temporal space and that the object remains a signaller unless altered by another agent (Wobst 1977:321). This is true of rock art where an artist could create a motif (signal) in isolation and their contemporaries and future generations could view and engage with the information embedded within it later. Significantly, rock art production is bound to a specific place in the landscape which provides a degree of spatial context to this information, both to intended recipients and later archaeologists. Moreover, where

temporal sequences are known, one can observe later interaction with rock art, for example the addition of new material culture into older scenes (see Brandl 1988:47 Figure 89,154 Plate XLIV). Within the Dynamic Figure art of Jabiluka, the dense concentration of scenes and motifs at Dynamic Places (see Chapter 6) further demonstrate this phenomenon and how artists responded to Dynamic Figures in the recent past (see Chapter 10).

Wobst (1977:322) also ascribed an efficiency and endurance to material culture messengers in this information exchange process. He argued:

> [o]nce produced, these messages change slower than in other modes. Thus they require more of a commitment on the part of the emitter… This makes it easier to monopolize information exchange in this mode via certain artifacts and to control the emission of message. (Wobst 1977:322)

In relation to rock art chronologies, this suggests that there is an advantage for artists to continue creating an established style which is already understood by the intended recipients. Also, when change occurs it will be gradual, unless prompted by a significant external source (e.g., Lewis 1988:101-102).

Smith (1994:10-11) succinctly summarised Wobst's interpretation of style and argued that despite some emic aspects, it was still informed by an etic understanding of style and culture. She observed that '…the main functions of style are related to cultural processes, such as group integration and differentiation, boundary maintenance and a general compliance with norms, which are associated with the communication of social identity' (Smith 1994:10-11). Information exchange is an underlying assumption of this thesis' framework, as with many studies, and Dynamic Figure art is understood as a method of communication. For this reason, the definition of style employed in this thesis encompasses both etic and emic perspectives.

### 4.3.2 Application within Australian rock art

Information exchange theory has underpinned many studies of rock art in Australia (Ross and Davidson 2006:308-309). Principally, these studies have explored how stylistic variation within rock art imparted messages to observers. This variation can take many forms including pigment colour (McDonald 2008; Taçon 1993), decoration or infill of material culture (McDonald and Harper 2016), and techniques (McDonald

2008; Smith 1989). Each study has some aspects that are applicable to this research but due of the type of rock art or the attributes of stylistic variation examined some are less applicable. For example, Taçon (1993) focused upon the colour used in X-Ray fish depictions in Kakadu to determine artistic boundaries and exchange. Although, his study area surrounds Jabiluka, the colour of Dynamic Figure art was not recorded because no objective way of recording and comparing colours could be developed within the constraints of the survey. Furthermore, examples were recorded where the colour of Dynamic Figure motifs had clearly changed over time, the implication is that any observation of colour is not applicable for understanding past preferences (see Section 5.3).

McDonald (2008) used information exchange to examine stylistic boundaries in the rock art of the Sydney region. As well as Wobst (1977), she drew upon Wiessner's (1984; 1990) anthropological studies from Africa to interpret stylistic preferences in the rock art (McDonald 2008:5,334). McDonald (2008:292) demonstrated the existence of stylistic boundaries by applying correspondence analysis (CA), which produced *qualified statements* about stylistic preferences. For example, she argued that pigment colour preference did not correspond with the easiest available source of pigment in that area (McDonald 2008:338). She also demonstrated that while stylistic preferences of fauna form, the number of legs they had in profile, existed some preferences crossed language boundaries (McDonald 2008:338). She argued that this sharing of rock art stylistic preferences over language boundaries demonstrated closer social interaction between specific people (McDonald 2008:338). She concluded:

> Through stylistic behaviour, groups around the region, who were not in constant verbal contact with each other, were able to communicate important social messages and demonstrate both broad-scale group cohesion and within-group distinctiveness. Throughout the Sydney region people signalled information about themselves using symbolic and iconographic signatures. (McDonald 2008:350-351).

This study is not examining boundaries as the study area is too small, but I do apply correspondence analysis to demonstrate stylistic preferences and patterning among Dynamic Figure art. Following McDonald, CA is used to produce qualified statements about observed patterns that are interpreted as social messages and contribute to group relationships through ritual practice (see Section 4.4).

CA was also employed by Travers (2015:113-115) to identify stylistic profiles of specific human figure motifs in the Kimberley and she employed these results to demonstrate continuity and change in that rock art sequence. Her aim was different from this thesis, focusing upon change over time instead of a specific period, but her thesis has demonstrated the validity of this method (CA) to analyse and investigate rock art and specifically human figure motifs.

Although not the focus this thesis, some results do contribute to aspects of the social boundary hypothesis proposed by Lewis (1988: Chapter 7). As noted, he argued that the homogeneity of the Boomerang period (Dynamic Figure period) across Arnhem Land represented the existence of larger social boundaries than the present day (Lewis 1988:101-102;113). Chaloupka (1993:106) suggested a similar social boundary narrative existed between Dynamic Figure art and subsequent styles but did not theorise the situations and mechanism that precipitated this change. However, as noted in Chapter 3, neither Lewis nor Chaloupka adequately demonstrated the homogeneity in Dynamic Figure art. Although, Lewis (1988:115) only presented this as a hypothesis and explained that further research was needed. This thesis begins part of the research by examining homogeneity in Dynamic Figure art and demonstrating, through CA analysis, the existence of two types of Dynamic Figure human figure motifs (Chapter 7). In future, these Dynamic Figure types can be compared to study areas in greater Arnhem Land to test Lewis's homogeneity hypothesis. Lewis's hypothesis is well argued and supported anecdotally by other studies (Ross 2003; Taçon 1993) and I suspect that comparison of the data produced in this thesis with other study areas will support his contention with some revision (see Section 10.2).

In summary, I interpret Dynamic Figure art as a form of communication, information exchange, with an inherent efficiency associated with this messaging. Within this framework, each of the research questions can be addressed, as they investigate ritual messaging associated with place, motifs and the nature of Dynamic Figure art production. In Section 4.4, I outline and expand upon the context in which Dynamic Figure art communicated — ritual practice. Here, I discuss Ross (2003), who employed information exchange theory to investigate ritual in central Australian rock art and specifically developed a methodology for examining the relationship between ritual and rock art.

### 4.4. Studies of ritual

Archaeological studies of ritual vary greatly, not just because of the data being examined, but because the approach and definition employed within a study can greatly influence its discussion and outcomes. In this section, I outline how previous studies of ritual have inform this research and why rock art is a valid archaeological source through which to examine ritual. This discussion also expands upon the definition of ritual I employ in this thesis and the justification for employing the ritual practice theoretical approach to investigate ritual within Dynamic Figure rock art. Conkey (1985:305) argued that rock art (and portable art) is the most insightful form of material cultural for investigating ritual and, to illustrate this, I briefly discuss examples of research investigating ritual from excavated contexts as a comparison. The final part of this section outlines the *ritual indicators* used to examine ritual practice in Dynamic Figure rock art as these indicators form the headings for the first discussion chapter (Chapter 9).

#### 4.4.1 Defining and investigating ritual

The earliest archaeological investigations of ritual often focused on places associated with ritual (burial sites, tombs, churches, temples etc.), as this were places that archaeologists knew ritual practice had occurred. For archaeologists who research hunter-gatherer peoples this is was more difficult, as hunter gatherer peoples traversed broad landscapes and did not leave structures or objects clearly associated ritual practice in the places they lived (e.g., Jones 1977:201). Archaeologists faced with this situation contextualised their research through anthropology and ethnography and this section outlines how this research has drawn upon anthropological sources from northern Australia to define and investigate ritual.

Early archaeological investigations of hunter-gather peoples in Australia focused on the tools they made and things they ate (e.g., Mulvaney 1969). Archaeologists juxtaposed ritual with economic subsistence strategies; the former was largely unknowable or ‘odd’ behaviour and it was the latter that was best explored through archaeological evidence (Boivin 2009:268; David 2011:482; Insoll 2004:1,6). This dichotomy was informed by early anthropologists and was rooted in a perceived understanding that people in the past, especially hunter gatherers, had a binary understanding of their world, and all things were either *sacred* or *profane* (see Durkheim [1912] 1995; Stanner 1959:108). Following this line of thought, the key research question of this thesis could have

possibly been: is ritual evident in Dynamic Figure art? Therefore, testing the null hypothesis and in one manner a more scientific endeavour. However, the progression of anthropological research, especially collaborative research with Indigenous communities, has connivingly argued that the *sacred/profane* dichotomy is false, as religion, for those who follow it, permeates all aspects of people's lifeways. (e.g., Berndt and Berndt 1977:260; Stanner 1959:127; 1963:58; Insoll 2004:8-9). In my own experience working with people in Arnhem Land this is the case, as Bininj believe that there is a continued presence of creation beings and ancestors in their landscape. These beings are active agents who hold powers to enact change today but also changed and created the landscape in the past. Peter Balmanidba interviews with Brandl (1972b:13-15) about the Ranger mine and the Jabiluka area demonstrat this understanding, as he expressed concern that the mine would impact Dadbu (the King Brown Snake mythological being) who was very power and would bring 'great disaster' if disturbed. A broader example concerning art in northern Australia is Berndt (1963:3), who specifically argued that '…there is no question that most Aboriginal art is sacred' from his extensive anthropological research of art, myth and symbolism with communities in northern Australia (see also Berndt and Berndt 1977:260). Therefore, while answering a null hypothesis question is possible it would have produced narrow results. This discussion highlights two important points: the value of drawing information and frameworks from multidisciplinary sources, especially anthropology, to investigate ritual; and, the need to consider and clearly define ritual and religion, especially to determine viable research questions for archaeologists.

Ritual and religion have complex and intertwined definitions but by employing a *working* definition of each term, one can focus and effectively investigate research questions (Verhoven 2011:116). Fogelin (2007) summarised the complexity of these definitions as a dichotomy:

> Some archaeologists view religion as primary, with ritual as a means of enacting the embedded meanings of religious belief. Others see ritual as primary; the specifics of religious belief systems are created to conform to rituals practices. (Fogelin 2007:66)

The working definitions applied in this research follow this dichotomy, as I have considered religion to concern the beliefs and meaning behind the actions and objects of ritual (see also Insoll 2004:8-9). A further important distinction is that of ceremony and

ritual. In this investigation ceremony is narrowly defined as the public performance of ritual; therefore, only one component of ritual (see Section 4.4.3). These distinctions between religion, ritual and ceremony contextualise ritual as *ritual practice*; that is, the things and actions of ritual and not the meaning of those actions. Contextualising ritual as ritual practice is a methodological tool, as it creates a framework from which one can examine ritual without the explicit need to interpret what ritual is about.

Ritual practice, or the 'practice approach' to ritual as Verhoven (2011:112) referred to it, has its roots in the research of Bourdieu (1977) and investigates the attributes present in ritual oppose to adequately defining and describing ritual in all its forms. Working within this framework anthropologists developed definitions of ritual practice from field research in global contexts. As noted, Turner, from his work in central Africa, defined ritual as a '…stereotyped sequence of activities involving gestures, words, and objects, performed in a sequestered place, and designed to influence preternatural entities or forces on behalf of the actors' goals and interests' (Turner 1977:183). Similarly, Rappaport's definition, developed from his work in Papua New Guinea, described ritual practice in similar terms; ritual is '…the performance of more or less invariant sequences of formal acts and utterances not entirely encoded by the performers' (Rappaport 1999:24). Rappaport (1999:26) and Bell (2009:16) argued that anthropologists who examined ritual practice had developed similar definitions because ritual practice has a universal and underlying structure. They argued that a fundamental set of attributes is present in all forms of ritual practice throughout time and space (see also Bell 1997:138-69; Fogelin 2007:58-60; Verhoven 2011). Bell (2009), and Rappaport (1999), identified a set of *ritual practice indicators* which manifest in all ritual practice and can be used to identify ritual from anthropological and archaeological data (see Section 4.4.3). Bell (1997:138-164) identified six attributes of ritual practice: Formalism, Traditionalism, Invariance, Rule governance, Sacral Symbolism and Performance (Section 4.4.3; see also Rappaport 1999:27-54). These indicators are used to investigate ritual practice in Dynamic Figure art.

Anthropologists in Australia had also observed and described the universal structure of ritual. Stanner in his *call to arms* of studies of Aboriginal religion, *On Aboriginal Religion I-VII* (1959,1960,1960a,1961,1961a,1963,1963a), argued that anthropologists must begin their examination of religion and ritual with an investigation of its structure, if anthropology is '*…to make any serious claim to being a theoretical as well as a realistic discipline*' (Stanner 1963:58). He argued that from an understood structure of

rites [ritual], one can begin to examine their *transective relationships* between broad analytical concepts - political, economic or religious agents and agency (Stanner 1963:58). In his study with the Murinbata people from Wadeye (Port Keats) Northern Territory, Stanner described the *Punj* ceremony. He likened it to a sacrificial and initiation ritual but argued that either term was not wholly suitable. He explained:

> 'The fundamental operations, while undoubtedly there, are caught up as a core within a very different cover, and the pattern woven into the cover is an unaccustomed one. Nevertheless, there is an homolog.' (Stanner 1959:110)

Stanner observed that the *Punj* ceremony had, at its core, a structure homogeneous to all ritual practice. He argued that while all rituals have different covers their underlying structure is the same. Stanner's research was able to expand much further than just the structure of ritual practice as he examined specific agents, meaning and myths within this ritual – only possible as he was able to undertake anthropological and ethnographic research with participants of that ritual (Stanner 1959:127; see also 1961,1961a). Similarly, Berndt in his study of six economic exchange ceremonies conducted by the Gunwinggu [Kunwinggu] of Gunbalanya (Oenpelli) observed that, '*all these ceremonies follow a broadly similar pattern*' (Berndt 1951a:173). In this instance, he used ceremony in a similar manner to how ritual performance is defined in this thesis.

In his comparative study of northern Australia and central Australia rituals, Meggitt (1966a,1966b) investigated the Gadjari ritual of the Walpiri people which he compared to the Gunwinggu's Kunapipi and the Aranda's Ingkura rituals. Like Stanner, Meggitt (1966a) employed ethnography and anthropology to move beyond an examination of each ritual's structure to examine the Gadjari's deeper religious significance; however, he observed invariance between the structures of each ritual in his study. Meggitt writes:

> Although the sequences of ceremonies displayed in these synoptic tables (4, 5, 6) are not immutable, they are relatively invariant, and it is clear that the ritual leaders have such ideal patterns in mind and try to adhere to them. However, this may be, the overall resemblances among the three ceremonial complexes are striking, and all three have at least the following components in common... (Meggitt 1966b:22)

The components that Meggitt observed in common to these ritual practices are very similar to Bell's (1997:138-164) and Rappaport's (1999:27-54) ritual practice attributes and concern: formalism, performance, rule governance, sacral symbolism and specialised place (Meggitt 1966b:26).

While anthropologists could record ritual practice in action and observe the structure of ritual practice; archaeologists in Australia often found it difficult to investigate or extrapolate ritual from taphonomically biased excavated material culture alone (see Section 1.2), often drawing upon ethnography to bridge this absence (see David 2011; e.g., Wright et al. 2016b). However, the details imbedded in the rock art of certain Australian assemblages are an exception and Ross (2003) used the ritual indicators of Rappaport (1999) to investigate the relationship between ritual practice and rock art in central Australia. It was her frame work and method that I employ and develop for this thesis (see Section 4.4.3).

### 4.4.2 Archaeology, ritual and Dynamic Figure art

Archaeological investigations of ritual in Australia are difficult, especially in northern Australia, as meaningful archaeological evidence if often absent even after recent ritual practices. Jones' poetic observation at the site of a Kunapipi ceremony three months after it finished is illustrative of this point; he wrote that all that was present at the site was *'…wind, whirling red dust over midden debris and strips of paperbark rattling against bleached poles of collapsed hut structure'* (Jones 1977:201). It is beyond the scope of this research to completely trace the history of ritual studies (see Bell 1992; Insoll 2011; Kyriakidi 2007; Whiley and Hays-Gilpin 2008); however, in this section I examine the theoretical approaches used to investigate ritual in Australian and of Dynamic Figure art. This discussion contributes to the justification of employing the ritual practice approach in this thesis.

Archaeologists, who excavate with the aim to examine ritual, take the place of their excavations as crucial in their interpretation of material culture as being related to ritual. Not without exception, but interpreting discarded stone tools or fauna remains as related to ritual practice is extremely difficult without first knowing that their excavated context is one which is related to ritual activity (David 2011:483). Wright et al. (2016b) is a prime example of this, where the researchers excavated a site of know ritual activity in the Torres Strait indicated by contemporary ethnographic information (Wright et al. 2016b:722). This excavation was able to contextualise the dugong bones mounds as

related to ritual because of a known connection between the site, eating of dugongs and men's ritual practice (Wright et al. 2016b:722). However, the material culture at the excavated itself is not overtly indicative of ritual practice. In another study from the Torres Strait, McNiven and Feldman (2003:183) argued that the order of the dugong bones within the excavated context supported a ritual interpretation; however, they still relied upon rock art and ethnographic material to identify and contextualise the ritual place (see also Brady 2010; McNiven et al. 2009). In a west Australian context, Gibbs and Veth (2002) investigated how archaeology could inform the ethnographically documented expansion of 'Western Desert' culture in relation to ritual circumcision practice in the recent past. Once again, in order to investigate this ritual practice, they started with historical and ethnographic sources to inform what they could look for as indicative archaeological signatures (Gibbs and Veth 2002:11). Supported by this ethnographic evidence (Gibbs and Veth 2002:15-17), Gibbs and Veth suggested that particular locations that contain heterogeneous rock art and excavated materials are indicative of 'aggregation locales' (see also Conkey 1990) and places where 'cultural/genetic/ritual flows' took place (Gibbs and Veth 2002:14). They argued that it was from these places that 'Western Desert' culture expanded which suggested the need to question certain earlier anthropological understandings and maps (e.g. Tindale 1974) of the past (Gibbs and Veth 2002:17). Their study further demonstrates the reliance that excavated archaeological research has upon ethnographic or historical underpinnings when investigating ritual practice.

In contexts where no ethnographic information exists, such as Middle Stone Age Africa, archaeologists rely upon certain material culture types, such as ochre, beads or objects that hold evidence of symbolism, to identify ritual (e.g., d'Errico et al. 2005). However, just the presence of these types of material culture does not immediately indicate a ritual association (Coulson et al. 2011; see e.g., Barton 2005; Wadley 2006; cf. Henshilwood et al. 2009; Knight 2010; Mackay and Welz 2008; Watts, 2009). Even in Australia, where ethnographic evidence is present, similar types of material culture cannot be directly associated with ritual (e.g., Wright et al. 2016a). In contrast to the excavated record, the detail imbedded in rock art paints a fuller picture of ritual in the past even without direct ethnographic evidence (see below).

Taçon's (1989a) investigation of recent rock art, which investigated ritual and mythology, argued that much of the rock art in Arnhem Land relates ritual. He argued:

> Visual expression throughout Arnhem Land is closely related to myth and ritual but this is especially true of Western Arnhem Land rock paintings. (Taçon 1989a:356)

Taçon presented this conclusion because he worked directly with rock artists and their family members (Taçon 1989a:69-80; see Section 4.5.1). Moreover, he argued that it was through ritual, in this context ritual practice, that people understood and 'intensified their links and bonds with the larger natural and supernatural world' (Taçon 1989a:375). It was this understanding of rock art, ritual and rock art production that Taçon brought to his investigations of Dynamic Figure art, a body of art without a direct ethnographic source.

In the literature review (Chapter 3), I discussed the research of Taçon, Chippindale and Smith who investigated supernatural beings (therianthropes) in Dynamic Figure rock art (Chippindale et al. 2000; Taçon and Chippindale 2001a). Their investigation drew upon analogous mythologies collected from ethnographic and anthropological sources but was principally derived from the analysis of Dynamic Figure motifs (Taçon and Chippindale 2001a:184-185). Chippindale et al. (2001a) explained:

> '…we need to use formal knowledge derived from the Dynamic images themselves, and not to seek constantly the reassurance that an aspect must be congruent with present-day ethnography' (Chippindale et al. 2000:69).

Formal knowledge in this instance refers to archaeological methods, recording the motif's form, colour, infill, the scene or context in which it's depicted and developing classificatory types for comparison (see Chapter 5). Chippindale et al. (2000) used these formal methods to describe the forms and variations of therianthropes in Dynamic Figure art; they also reported statistics and trends among those forms. For example, Taçon and Chippindale (2001a:192) reported that 'flying fox-headed figures have male sexual features or none', while 'most macropod-headed creatures do not have sexually distinguishing features'. These observations provide some insights into the relationship between these motifs and mythology during the Dynamic Figure period – it appears that flying foxes are more associated with maleness than macropods within mythology.

To complement their formal analysis, Taçon and Chippindale (1994,2001a; Chippindale et al. 2001a) also employed ethnographic analogy to investigate ritual within rock art. For example, they suggested that some scenes may depict ritual fighting as described

first hand by Warner (Taçon and Chippindale 1994:230; Warner 1937:161). Taçon and Chippindale's application of ethnographic evidence was as an analogous reference (see also Ross 2003) where its validly relies upon the connection between the ethnographic source and the rock art; this is in contrast to the direct historic ethnographic approach of the excavated examples from the Torres Strait or Western Australia (above), where researchers asked direct questions about ritual and place known to the Aboriginal people of that Country (see also Brady and Bradley 2016; May and Domingo Sanz 2010). The following section (Section 4.5) contextualises and examines the ways in which archaeologists have employed ethnography to study rock art and ritual.

Taçon and Chippindale's various investigations of Dynamic Figure art primarily focus on its parallels and relationships to mythology (e.g., animal headed beings and the Rainbow Serpent) instead of a formal analysis of the existence of ritual influence or behaviour in the art. They take this as granted; although, this attitude is not without merit (e.g. Berndt 1963:3; Taçon 1989a:5). They discuss indications of mythology within the rock art but do not relate this in great detail with ritual practice of the artists who would have produced that rock art. While, they do discuss altered states of consciousness (ASC) as a possible interpretation of Dynamic Figure art they also note that ASC are not a major cultural phenomenon in northern Australian Aboriginal culture (Taçon and Chippindale (2001a:200). They also observed some similarities between depictions in rock art and ritual performance (Taçon and Chippindale 2001a:186,201); however, their research did not establish a conclusive link between Dynamic Figure art and ritual instead associating it more broadly with selected mythologies. This research expands upon their studies by undertaking a rigorous methodological examination of the connection between Dynamic Figure art and ritual.

As noted, Conkey (1985:305) argued that rock art is among the best placed archaeological source to examine ritual practice, this statement she supported with her own study of rock art at Altamira. She argued that the variance of attributes of rock art Altamira contrasted with the invariance of attributes of portable art objects, suggesting that rock art sites where places were different people came together, communicated through rock art and conducted ritual practice (Conkey 1980:610,612, cited in Ross 2003:5). To develop and test this hypothesis she relied on analogous ethnographic studies of ritual practice from Africa (Ross 2003:5).

The key distinction between these examples of excavated and rock art archaeological investigations of ritual practice is not so much the use of multi-vocal ethnographic

sources; but the fact that rock art can be methodologically investigated as evidence of ritual practice by the very nature of what it is and then informed and evaluated by these multi-vocal sources. Whereas, excavated material often, especially in Australian prehistory, has to be explicitly identified as relating to ritual practice by these multi-vocal sources and then it can be investigate in relation to ritual practice. Therefore, and as noted by Conkey (1985:305), rock art is best placed to investigate ritual practice through informed and formal methods.

To methodologically investigate ritual in Dynamic Figure art I have drawn upon the research of Ross (2003; see also Ross and Davidson 2006), who investigated rock art assemblages from central Australia. Ross also adopted a practice approach to ritual; although, she framed it as a structuralist approach as she focused on the research of Rappaport (1999) who described his work within a structuralist discourse. Ross summarised the strength of her structuralist method to examine rock and ritual, as she argued:

> …the focus of analysis is placed on the structure rather than the individual content of each rock art assemblage so that the theoretical framework can be equally applied to a range of varying assemblages without concern for the meaning of particular motifs. This is especially relevant to the analysis of prehistoric rock art assemblages where meaning cannot be recovered. (Ross 2003:295)

She argued that one can investigate the structure of ritual from rock art assemblages because of the observed attributes in all forms of ritual practice present through time and space (Section 4.4.2; Bell 1997:138-69,2009:16; Fogelin 2007:58-60; Rappaport 1999:26; see also Verhoeven 2011). Like the anthropological studies described above (Section 4.4.1), she focused on the structure of ritual – the first step of any methodological investigation. To investigate ritual within her study area, Ross (2003:53) developed specific indicators of ritual for rock art assemblages, similar to the ritual indicators of Rappaport's or Bell's but more suited to rock art (see Section 4.4.3). She, using these indicators, concluded that much of rock art in central Australia had a relationship with ritual (Ross 2003:1). This research employs Ross' ritual indicators to Dynamic Figure art to examine its association with ritual practice and answer the primary research question.

Importantly, Ross (2003:295) asserted that her approach was not intended to understand specific rituals but identify ritual practice by its universal structure within a rock art assemblage. Bell (2009:16-17) also argued that while this structuralist or practice approach can be used to effectively identify ritual from data, it is limiting beyond this identification. To ameliorate this to some extent, I examine the degrees of significance of specific ritual indicators, identified by Ross, which I argue provide further insights into people's lifeways and ritual behaviour in Dynamic Figure art (see Chapter 10). This aspect of my analysis informs the subsidiary research questions, concerning ritual places, motifs and material culture. In contrast to Ross (2003), who considered the full assemblage of rock art she recorded, this study focuses upon a single time period and one body of art. This focus allows for a greater investigation of the implication of the various indicators and associations between Dynamic Figure art and ritual, and in doing so it overcomes some of the limitations of this method.

### 4.4.3 Ritual indicators

In this section, I outline the ritual indicators used to examine Dynamic Figure art which informed each of the results chapters (Chapters 6-8) and provided the structure for the discussion chapters (Chapters 9-10).

Table 4.1 outlines the ritual indicators according to Ross (2003) and Bell (1997). They are listed in the order in which each researcher presented them, despite their overlaps. In the discussion of the ritual indicators, I also draw upon Rappaport (1999) and Ross and Davidson (2006). Bell (1997:138-139) noted that the definitions of these indicators are intertwined as certain attributes of ritual relate to many of the indicators. This observation is very true of Dynamic Figure art, as I will argue that certain attributes could be associated with various indicators, e.g., therianthropes relate to sacral symbolism and ritual time (Chapter 9; see also Johnston 2017). The discussion of ritual indicators below follows Bell's (1997) headings as her study has a broader research base and allows for a more encompassing discussion of ritual practice and Dynamic Figure art. However, I discus both sets of indicators here and in Chapter 9.

**Table 4.1. Ross's and Bell's indicators of ritual**

| Ross (2003:55; see also Rappaport 1999:27-54; Ross and Davidson 2006:312) | Bell (1997:138-164) |
|---|---|
| Invariance | Formalism |
| Repetition | Traditionalism |
| Specialised time | Invariance |
| Specialised place | Rule governance |
| Stylised behaviour/stylised form | Sacral Symbolism |
| Performance and participation | Performance |
| Form which can hold and transfer a canonised message | |

Although a tautological observation, it is telling that according to Bowie (2000:26), Bell (1997) primarily discussed world religions (e.g. Islam, Hinduism, Christianity) and rituals from the cultures associated with them; while Ross (2003) focused upon a traditional religion (localised Aboriginal mythology). Despite this, their indicators are very similar (and must be) to support a structuralist interpretation of ritual practice.

Bell (1997:139-141) defined f*ormalism* as a restricted and codified set of repeated attributes or ways of doing things (style), this includes activities, speech patterns and material culture. This style is defined as distinct from a 'casual' ways of doing these same things. Rappaport (1999:33) described this formal style as ritual decorum and juxtaposed it with a 'casual' manner of doing something also. Bell (1997:139-141) argued that while *formalism* indicates ritual practice it also bolsters the effectiveness of the information communicated and unifies people to accept the communicated message. However, formalism also limits the range of messages that ritual can communicate; this she argued was evident from investigations of actual ritual practice (e.g., Bloch 1986). *Formalism* encompasses two of the indicators Ross (2003:55) identified; *specialised space* and *stylised behaviour/stylised form*, it is also closely linked with ritual messaging and canonical messages (Rappaport 1999:52-55). Each indicator is pertinent to the key research question but formalism is directly relevant to the subsidiary research questions concerning ritual places and material culture that is associated with ritual.

Bell's second indicator is *traditionalism* (1997:145), which corresponds with Ross's (2003:55) *repetition*. *Traditionalism* is the repetition of activities and practices from the past and can also involve adapting these activities to new settings (Bell 1997:145). Bell's argument concerning adaption relates directly to Rappaport's (1999:36) 'more or

less fixed' attribute to ritual practice. Each acknowledges that ritual does change over time as people and their world changes but within ritual practice people actively seek to continue conducting specific activities from the past.

The indicators discussed so far demonstrate the overlap between these terms and each researcher's nomenclature. Bell's *formalism* and *traditionalism* are Ross's *repetition, specialised place* and *stylised behaviour/stylised form*. They culminate into ritual being identifiable by the repetition of formal activities that use specific sets of appropriate language, action and attire conduced at specialised places.

Both researchers use the term *invariance* (Bell 1997:150; Ross 2003:55), defined in similar terms to formalism but emphasising '…usually seen in a disciplined set of actions marked by precise repetition and physical control' (Bell 1997:150). Bell (1997:150) emphasised that invariance, unlike *formalism*, specifically 'ignores the passage of time'. Ross (2003:225) found that *invariance* was linked with *repetition* within her study of rock art assemblages, specifically through specific recurring motifs. As an indicator of ritual, the examination of recurring motifs in Dynamic Figure art provides insights into actual oppose to imaged ritual practice behaviour and iconographic art systems and mechanism (see Chapter 10).

Bell (1997:155) described r*ule governance* as presenting the acceptable actions and behaviours appropriate to ritual practice. Her discussion focused upon how rule governance legitimised the power relationships within a group and disparages challenges to the status quo (Bell 1997:155). Rappaport (1999:52) described the same attribute of ritual as self-referential messaging and described it functioning in a similar fashion. Following this, Ross and Davidson (2006:313) noted that in some ritual contexts a senior custodian is the primary participant in the performance and the ritual helps to reinforce their status (see also Rappaport 1999:52; Taylor 1996:9). The rule governance ritual indicator is a prime example of how examining the degree of significance of a ritual indictor can inform about the people who painted Dynamic Figure art (see also Bell 1997:93-94). For instance, if rule governance is present and routinely manifests as indicating initiated and uninitiated or defined gender relationships, it would suggest that initiation ceremonies may have been significant at this period. *Rule governance* addresses the key research question and is also significant for examining the subsidiary research questions which form much of the discussion in Chapter 10.

Bell's s*acral symbolism* directly correlates with Rappaport's (1999:38) argument that the rituals are attained by supernatural powers and contain canonical messaging (see also Ross 2003:54,56-57). Although, all aspects of a religious person's life are influenced by their belief in the supernatural (e.g., Insoll 2004:8-9); rituals are specifically identified as coming from supernatural beings. Bell (1997:159) discussed the symbolic meaning behind ritual and the concept that activities and things within ritual practice are more than they are; similarly, this concept is described by Rappaport (1999:52-55) as *canonical messages* (see also Ross 2003:56-57). Specifically, canonical messages are those which indicate how the world is (Rappaport 1999:52-55) and, therefore, relate in part to aspects of Bell's *rule governance*. Pertinent to this thesis, Taçon and Chippindale (2001a) have already discussed the numerous depictions of supernatural therianthropic beings in Dynamic Figure art. As with *rule governance* the degree to which sacral symbolism is present in Dynamic Figure art has implication for understanding the people who created this art and I have begun to explore some of these implications (see Johnston 2017).

Finally, both argued *performance* is a key indicator of ritual (Bell 1997:159-60; Ross 2003:55). Ross (2003:55) stressed that ritual practice must have an active performance (ceremony) aspect conducted by participants of the real world. Bell (1997:161) argued that performance creates a simplified concept of the world, where concepts can easily and coherently be *communicated beyond the chaos of human experience.* In this way, Bell tied performance with ritual *formalism, rule governance* and *sacral symbolism.* Examining *performance* in static depiction of rock art is not directly possible, however, Dynamic Figure art is highly figurative and I argue that artists have attempted to include performance in their scenes (see also Johnston 2017). The *performance* indicator is pertinent to exploring actual oppose to imaged ritual.

Both Bell (1997:164) and Rappaport (1999:26) observed that the attributes of ritual practice are not unique to ritual. However, Rappaport (1999:26) and Ross and Davidson (2006:312-313) argued that all attributes must be present to identify the association between ritual practice and the investigated material culture. Ross (2003:56) noted that rock art is largely absent from Rappaport's discussion of ritual and this thesis follows her research by exploring the association between rock art and ritual in the past.

Following Ross (2003), this thesis analyses rock art to investigate the presence of ritual indicators. Previously (Johnston 2017), I briefly discussed some of these indicators of ritual in relation to Dynamic Figure art and in Chapter 9 I will argue that each indicator

is present in the Dynamic Figure art of Jabiluka. The discussion in Chapter 10 explores the prominence or degrees of significance of specific indicators and the insights they have for understanding the artists who created Dynamic Figure art. This discussion is supported by ethnographic analogy and the validity and value of this method is discussed in the next section.

### 4.5. Ethnographic sources and their application within this research

The final theoretical, and methodological, aspect of this thesis is the application of ethnographic analogy. In this study, historical ethnographic records contribute to exploring aspects of the association between ritual practice and Dynamic Figure art. As noted, Insoll (2009:294) argued that in relation to studies of ritual, '…there is an obvious requirement for an anthropologically informed approach that integrates all available sources of evidence, archaeology, anthropology, ethnography, and historical ethnographic'. I have already discussed some examples where archaeologists have employed ethnographic evidence and analogy to investigate ritual practice (Section 4.4.2); however, using ethnographic information is not without its limitations and this section contextualises and discusses how ethnographic sources have been employed in archaeological studies in Australia, especially in studies of rock art, and how they are used effectively within this research.

Archaeologists have long employed analogy in various capacities to investigate material culture (Murry and Walker 1988; Wylie 1982,1985). In this context, analogy is understood as applying and comparing observations and knowledge of one thing to understand or comprehend another. Even researchers sceptical of the scientific validly analogies, concerned that one context is never like another, have been shown to rely upon analogy to interpret their data (Murry and Walker 1988:252-253; Wylie 1985). Moreover, Porr and Bell (2012) argued that employing ethnographic analogy produces a deeper understanding of rock art because of the distinctly different understanding Aboriginal people have of their world (see also Brady and Bradley 2016; Hays-Gilpin 2008a, 2008b; Hays-Gilpin and Lomatewama 2013).

Australia has always been considered a special context for archaeologists employing ethnographic analogy because Aboriginal people were perceived to be living lifeways contiguous with that of the people who deposited material in the shelters that archaeologists investigated. This understanding of the direct connection between contemporary people and the past justified the validity of ethnographic analogy (e.g.

Elkin 1979). For rock art researchers, one could ask the rock painters themselves or their families about the material culture they created (e.g. Taçon 1989a). This opportunity did not exist across Australia as some regions have been more adversely impacted by European colonisation; however, even in these regions individuals have passed on knowledge of Country and rock art as part of traditional knowledge transfer mechanisms. However, from across Australia historical ethnographic records of interactions and observations of Aboriginal people living on Country and creating material culture exists in the accounts of early researchers and 'explorers' (e.g., Gillen; Leichhardt; McKinlay; see Edwards 1979). It is because of this context that Barker (2007:73) argued, in Australia interpretations through ethnographic analogy are less concerned with 'notions of authenticity or accuracy' but how they can be 'applied scientifically'. To this end, ethnographic analogy in northern Australia has been applied in two manners: the direct historical approach and comparative ethnographic analogy. For this thesis, the former helps demonstrate what information the ethnographic record can provide and considerations when applying this information in an analogous manner, and the latter provides the method through which to best employ analogous information to investigate Dynamic Figure art.

### 4.5.1 Direct historical ethnographic approach

The direct historical ethnographic approach involves interviewing individuals directly connected to the production of a specific material culture object in order to investigate that material culture. This information can provide analogous information about material culture of that type if it's directly connected to it; in the case of rock art, material also produced by the same artist. The research of Taçon (1989a) in Kakadu is a prime example of the direct historical approach (see also e.g., Brady and Bradley 2016; Haskovec and Sullivan 1989). Taçon's research focused on the recent rock art of Kakadu and involved interviewing rock painters and the families of rock painters in order to better understand the rock art they produced (Taçon 1989a:69-80). In this way, he was able to explore different perspectives of Aboriginal rock art. For example, Taçon analysed and characterised the paintings of a recent rock painter Najombolmi, and he recorded observations such as Najombolemi painted three times as many women as men (Taçon 1989a:166). However, also through his investigation and discussions he was able in examine more complex connections between rock art and ritual, specifically he argued that 'many of the paintings of women with these designs [ritual designs painted on men's bodies during ritual performance] were executed by Najombolmi and have

myths or stories associated' (Taçon 1989a:159). He argued that by painting these designs Najombolmi may have been referencing the mythic understanding of Binij that many rituals in Kakadu were originally owned by women and were now the property of men (Taçon 1989a:159). This complex understanding and the interlinking of mythology [religion], ritual and rock art was only possible because he had worked with Najombolmi's brothers, Nipper Kapirigi, George Namingum and David Canari, who had identified and reveal the significance of their brother's paintings (Taçon 1989a:93; see also Haskovec and Sullivan 1989). On other occasions, the same group of men identified specific motifs in shelters known to them as being representations of mythological figures with associated creation stories, an understanding only possible of informed or insider persons of a cultural tradition (Taçon 1989a:234-235). South of Kakadu, Macintosh's interviews with Lamderod at Doria Gudaluk (Beswick creek cave) recorded some of the motivations for hand stencilling, including artists leaving a signature or as an act of fun (Macintosh 1951:266, see Chapter 9). These understandings of material culture and its production from an insider's perspective are invaluable for understanding how people lived in the past and provide archaeologists with an opportunity to investigate the motivations of individuals for creating material culture. Beyond the immediate site or motif discussed, archaeologists use analogy to apply this information and understanding of material culture to identify or investigate other directly connected iconography, motifs or sites; for example, the various depictions of Namarrgon (the Lightning man) or the Rainbow Serpent in western Arnhem Land (see Chapter 9; Brandl 1988:74-78; Taçon et al. 1996). As noted above, Murray (1988) argued that direct historical analogies are prominent in Australia because of the uniqueness of Aboriginal people's continued connection to their archaeological record.

However, a concern of direct historical analogies is that peoples' understanding of culture and material culture change over time and may depend on the connection they and/or their audience have with a particular place or material culture (Merlan 1989). Brady and Bradley's investigation of sorcery rock art at Kurrmurnnyini on Yanyuwa Country demonstrated this phenomenon (Brady and Bradley 2016). Over a thirty-year period, Brady and Bradley have asked the Yanyuwa people about the site of Kurrmurnnyini and its rock art, and over this time have recorded three different, yet connected, episodes about site. One episode concerns the senior old men and their families, whom Bradley had spoken with 1985 (Brady and Bradley 2016:2). On this occasion, Bradley was engaged to consult with these senior men about the site because of a proposed roadworks; he recorded their concerns about potential disturbance to the

site which they believed would cause people to become ill or die (Brady and Bradley 2016:10). These men had firsthand knowledge of the sorcery paintings at Kurrmurnnyini and their potency – they knew who had painted them and who been killed by them, they also knew old men in the community who could still paint sorcery rock art (Brady and Bradley 2016:10). A second episode concerns Leonard Norman, a Yanyuwa man, who was too young to visit Kurrmurnnyini in 1985 but accompanied the men to near the site. Years later in 2012, he was a senior man in the community and assisted the younger rangers at the site and ensured that they adhered to the correct cultural protocols when visiting (Brady and Bradley 2016:10-11). The third episode was recorded by Brady in 2013 when senior Yanyuwa women travelled near the site. The women, one of whom knew someone killed by the site's rock art, suggested that the site should be blown up with dynamite to destroy it and its power (Brady and Bradley 2016:11). These episodes demonstrate that the context in which one records ethnographic information is important as a person's age, audience and experience can have an impact upon how they understand rock art (see also Morphy 1999). For this thesis, Brady and Bradley (2016) highlights two points pertinent to using ethnographic information and analogy: (1) the enduring knowledge about culture, lifeways and places present in Aboriginal communities; (2) an individual's understanding and thoughts of a site can change overtime and different people, all connected to a site, can have different very understandings of that site.

The validity and justification of direct historical ethnographic analogy rests upon the connection between the interviewee and the rock art being examined; however, the information collected about Kurrmurnnyini, although connected, was not uniform. No interpretation or understanding of Kurrmurnnyini is 'more right' than the others, they are each products of the context from which they were recorded. Similarly, Taçon argued that there is not one true meaning of a rock art motif and that one image can have more than one meaning to individuals and groups of people (Taçon 1989a:103). Therefore, as Barker (2007:73) observed, the issue for archaeologists is not the validity or truth of the ethnographic information but how to use that information and analogy scientifically. Suggesting that information collected from one episode at Kurrmurnnyini could be directly applied to another rock art site in Arnhem Land would be erroneous. However, each episode about Kurrmurnnyini is valuable insight about that place and each described the power and the potency of its rock art and it is this type of observation, the potential potency of rock art (see also Taçon 1989a: 356), which can be applied more broadly to investigate the relationship between rock art and sorcery. Ross

(2003:53-54), in her study of rock art and ritual, argued that ethnographic information can be analogously used in this manner to understand the structure and form in which ritual practice may take but not to understand the meaning of a ritual or what it is about. It is this type of ethnographic analogy, often called comparative ethnographic analogy and the other manner in which ethnographic information is used by archaeologists, which is employed within this thesis.

### 4.5.2 Comparative ethnographic analogy

Comparative ethnographic analogy involves archaeologists using ethnographic information recorded in one context to understand another, i.e. information from one region to understand another or recent information to understand the distant past. A concern of this approach is that it often preferences continuity and a notion of an unchanging or static people and culture (see David and McNiven 2004); despite the what the archaeological evidence may suggest or the perspectives of contemporary people about their own past. As shown, ethnographic information although invaluably insightful is not static over time or between people within a cultural group. In studies of Australian rock art, comparative ethnographic analogy and direct historical ethnography have been rigorously debated (e.g., Morwood and Hobbs 1988) and even individual scenes have been cited and heavily debated in this discourse (e.g., Taçon and Chippindale 1994; Davidson's response to Taçon and Chippindale 1994:233-234; Chippindale et al. 2000:69). The outcome of this discourse is an acknowledgment of the significance of ethnographic perspectives to understand the past and the importance of appropriate methodologies and contexts in which to employ analogy (Layton 2001; Taçon 1988:15, 1989a, 2001:115).

To illustrate the limitations of ethnographic analogy and appropriate methodologies though which to employ comparative ethnography, I examine a recent case study from Injalak Hill, 30 km from Jabiluka. In May and Domingo Sanz (2010), the authors examine a complex rock art scene of human figures at Injalak Hill (Figure 4.1). In their own examination of the scene, they identify various pieces of information. They surmise that a significant cultural activity is being depicted as it was reminiscent of ritual performances known to them from the historic ethnographic record (May and Domingo Sanz 2010:37-38). The argued that the scene shows convergent activities but with a central focus; involves many individuals who are not demarked by status or gender and that the placement and posture of each motif relates to their role within the scene (May and Domingo Sanz 2010:38). In the second stage of their interpretation they

discuss the scene with senior men and painters who live in the vicinity of Injalak Hill. From these discussions, they confirm aspects of their interpretation and are made aware of the specific knowledge that these initiated men can infer from the specific form of the motifs (May and Domingo Sanz 2010:40), it's important to note that these men did not paint the scene or know who had. While the archaeologists could relate the scene to ritual, the senior men could relate it to specific ceremonies or ritual performances of a specific ritual (May and Domingo Sanz 2010:40-41; see also Domingo Sanz 2011).


*Figure 4.1. Following May and Domingo Sanz (2010:36, Figure 1): a scene depicting ceremony at Injalak Hill.*

This episode could be described as typical according to anthropologists who have examined figurative contemporary art in northern Australia (e.g., Morphy 1991, 1999; Taylor 1996). In Arnhem Land today, art is produced within initiation knowledge systems where depending upon a person's level of initiation they will understand less or more about a specific art work (Taylor 1996:102-103; see also Taçon 1989a:234-235). Morphy (1999:14-15) argued that figurative art is specifically painted in manners that can be simply read by the uninitiated or uninformed and through a person's life they will understand more about specific motifs and scenes within a piece of art. That is, artists specifically ensure aspects of their art can be 'read' by the uninitiated while also imbedding within their work information for the initiated observer. Dynamic Figure art also contains many of the figurative and narrative attributes that May and Domingo Sanz (2010) observed in their study which just demonstrates the value of investigating Dynamic Figure art via ethnographic analogy (see also Johnston 2017; May et al. 2017a)

May and Domingo Sanz (2010) investigation outlined a useful methodology for employing ethnographic analogy to investigate Dynamic Figure art as they demonstrate

and note the limitations inherent in comparative analogy for understanding past rock art. As archaeologists, they could use comparative analogy to broadly understand the context of the scene but not the specific ritual practice being depicted. In the context of this thesis and as Ross attested, ethnographic information can be employed to understand the structure and form of ritual practice but not to understand which specific ritual is depicted or what a depicted ritual is about (Ross 2003:53-54).

### 4.5.3 Justification for employing ethnographic analogy to investigate Dynamic Figure art

In western Arnhem Land and its surrounds, researchers have used comparative ethnographic analogy to understand recent and older rock art (e.g., Allen 1997:138; Domingo Sanz 2011; Johnston 2017; Macintosh 1977; May and Domingo Sanz 2010; May et al. 2017a; Smith et al. 2016; Taçon and Chippindale 1994, 2001a). As noted, the validity of these studies is underpinned by a level of continuity in north Australian lifeways (Chaloupka 1993; Taçon 2001) and also an understanding of the limitations of comparative ethnographic analogy. While, the continuity forms one part of the justification for employing comparative ethnographic analogy in this thesis, the second is built upon the underlying structure of ritual. As described above (Section 4.4), ritual practice has a universal underlying structure (Berndt 1951a:173, 1951b; Morphy 1991, 1999; Meggitt 1966b; Rappaport 1999; Stanner 1963; Taylor 1996; Warner 1958); and following Ross (2003), employing comparative ethnographic analogy can be used to investigate aspects of the structure of ritual practice. Like Ross (2003:53-54), this study is not investigating what ritual practice is for or about but how this structure maybe association with Dynamic Figure art. Once this association is established in manner that can be investigated archaeology (Chapter 9), further analysis of the mechanisms, attributes, and styles within the structure of Dynamic Figure ritual practice can be compared to ethnographic and anthropological accounts from northern Australia (Chapter 10).

The use of ethnographic analogy to specifically explore Dynamic Figure art has been limited which is a line of inquiry that this thesis addresses. While Taçon and Chippindale have looked for mythology within Dynamic Figure art (e.g., Chippindale et al. 2000; Taçon and Chippindale 2001a), few studies have explicitly looked in detail at ritual practice within Dynamic Figure art, beyond anecdotal observations (e.g., Brandl 1988; Lewis 1988) The depths of possibility for this research agenda is highlighted by May et al. (2017a), where we explored just a single Dynamic Figure scene that possibly

depicts body painting, scarification or circumcision. This discussion demonstrated that multi-vocal historical, ethnographic and anthropological sources could be used to effectively examine rock art, ritual and society in northern Australia and examine ritual practice in the distant past (May et al. 2017a). Similarly, in Johnston (2017), I examined how artists had likely painted real oppose to imaged ritual practice and how the headdresses of human figures within the scene may have indicated their role and functions within the depicted performances. This thesis continues and expands this research.

### 4.6 Conclusion

This chapter has outlined the theoretical concepts and framework of this thesis and explained how this research will examine indicators of ritual practice within Dynamic Figure art. I have conceptualised style and information exchange by examining its application in local and international theoretical studies of rock art and archaeology. Following this, I examined research that adapted this framework to Australian rock art assemblages, such as the work of McDonald (2008) and Ross (2003), which informed my own study. As part of this discussion, I provided a research specific definition of style and demonstrated why rock art is an effective data source to examine ritual practice. I expanded upon the definition and understanding of ritual that is being employed in this thesis and I also outlined how each of the ritual indicators will be examined within Dynamic Figure art. Finally, I outlined how ethnographic analogy has been used to investigate rock art and the approach and limits of its application in this thesis. The next chapter concerns the methods employed to record the Dynamic Figure art of Jabiluka.

# Chapter 5: Methodology

> *You can't count the sheep until you decide how they are different from goats.*
>
> Lesley Maynard (1969)

## 5.1. Introduction

This chapter outlines the survey and data recording methods of this research and the analyses employed to interrogate the recorded data. Methodology was developed in a hierarchical manner (site, scene and motif) and each level contributes to answering the key research question: does Dynamic Figure rock art provide insights into past ritual behaviours. Also, different levels of this hierarchical methodology were developed to answer each subsidiary question. The Mirarr Gunwarddebim survey (site) data, after analysis, is used to examine if Dynamic Figure rock art indicates areas associated with ritual practice within a wider cultural landscape and these results are presented in Chapter 6: Results 1: *Dynamic Places*. The Dynamic Figure (motif) recording method outlines how human figure motifs were recorded and these results are presented in Chapter 7: Results 2: *Dynamic Motifs*. These results are pertinent to examining many of the ritual practice indicators, answering the key research question and exploring how the material culture of Dynamic Figure motifs and the motif themselves are associated with ritual behaviour. Finally, the last results chapter, Chapter 8 Results 3: *Dynamic Scenes*, corresponds with the Dynamic Figure scene recording method and is employed to examine whether Dynamic Figure narrative scenes provide evidence for actual (as opposed to imagined) ritual activities as well as ritual practice indicators in Dynamic Figure art.

This is the first time this level of detailed recording and analysis has been attempted for Dynamic Figure art and it builds upon over 30 years of previous research in the area. As such, the following results chapters provide new and important insights into this rock art, ritual practice and the people who were producing it.

## 5.2. Mirarr Gunwarddebim and Australian rock art recording

The Mirarr Gunwarddebim project's recording method was part of a gradual, but major, shift in rock art recording methods in Australia (see Brady et al. 2015:2; McDonald and

Veth 2012:1-2). This shift was characterised by methodological and technological developments, and has created a contrast between early rock art research (pre-1990s) and more recent large scale and 'well-funded' research projects (Brady et al. 2015:2, McDonald and Veth 2012:4-5; see also Canning Stock Route Project, Veth 2012; Change and Continuity Project, Travers 2015; Murujuga [Project], McDonald and Veth 2009; Picturing Change Project, Taçon et al. 2012). The key technological recording differences between those earlier projects and recent ones is the use of electronic tablets instead of paper recording forms and the quality of digital cameras (see Section 5.2). Although, paper recording forms were still used to record rock art for the Picturing Change Project and the Change and Continuity Project (Taçon et al. 2012; Travers 2015; see also Gunn and Whear 2007:9). Taçon remarked that the Picturing Change Project was the last time he took photographic slide film into the field (Tacon pers. comm. 2016). Furthermore, a major change in survey methodology also took place for these projects as large teams of researchers, students and volunteers systematically surveying large areas for rock art instead of one or two researchers working by themselves to record specific sites. This situation is also reflected in the number of researchers contributing to publications - teams of co-authors compared to single author publications (McDonald and Veth 2009:4; cf. Chippindale and Taçon 1998).

As described in Chapter 3, researchers have been undertaking rock art surveys in western Arnhem Land for almost 60 years but despite these numerous surveys a detailed systematic survey to the level archived by the Mirarr Gunwarddebim had not been previously attempted or achieved. Early rock art researchers focused upon particular areas that contained clusters of rock art sites (e.g. Brandl 1970; Chaloupka et al. 1985; Edwards 1979), as these often had large densely painted panels from which superimposition analysis and chronological studies could be undertaken (see Chapter 3). Even recently, inaccessibility, funding and project design has often meant that not all sites are recorded. Gunn and Whear (2007) concluded that the sheer density and inaccessibility of rock art sites in Jarowyn Country meant that they could not be all recorded or in the detail they would have wished (see also Brady et al. 2015:5).

> To this end an appropriate site form was devised that allowed rapid recording of basic information about each site's location and contents, as it was readily apparent that the number of rock art sites was going to reach into the thousands and it would be

> unpractical to undertake detailed recording of all sites within the current budget. (Gunn and Whear 2007:8)

During the Mirarr Gunwarddebim project, and unlike many of these previous studies, the likelihood of a site being recorded within the survey area was not dependent upon its size or the density of art and all sites were recorded.

### 5.2.1 Mirarr Gunwarddebim survey method

The first recording phase of this research was the systematic rock art field survey of Jabiluka conducted each dry season from 2012 to 2014. The Mirarr Gunwarddebim project had access to previous survey data to assist with relocating previously recorded sites and reviewed this information prior to the field surveys; however, it aimed to document all the rock art sites in Jabiluka (see Chaloupka 1975, 1978, 1984b; Cundy 1982; Morley and Lovett 1980, 1981). The entire study area was divided into 500 x 500 metre survey grids and teams were assigned one or more squares depending upon the density of the rock formations in that square (see also Hayward 2016a). The grid system and time spent surveying allowed for a high level of confidence that the vast majority of rock art sites were recorded. Importantly, the survey teams actively tried re-surveying the entire area, instead of just relocating old sites. This produced a systematic record of the Jabiluka rock art assemblage where statistical studies, like this one, would have a high level of confidence. This has produced significant results about period specific rock art production, site preference and more (see Chapter 6).

The Mirarr Gunwarddebim survey incorporated Taçon's parameters for defining a rock art site (see Taçon et al. 2010:418-418). A site was defined as a single geological feature, e.g., a boulder, or a panel with a separation of rock art motifs greater than 25 metres. For example, two boulders that leant against each other covered in art would be classified as one site; however, two boulders 25 metres apart or a long rock surface with isolated clusters of art greater than 25 metres would be recorded as two sites. These site recording parameters align closely with what Chippindale called 'splitters', rock researchers who record many distinct sites, in opposition with 'lumpers' or researcher who more often record one large site (Chippindale 2004:103).

This definition and parameters do not to conform to contemporary Bininj's perspectives or understanding of sites or places but are conventions that facilitate practical cultural heritage recording of sites and site complexes (see Ouzman 1998). How Indigenous people define a site is considerably more complex and varied. Taçon's discussion with

Bininj '…revealed that many sites did not have individual names and the names most often referred to a cluster of sites or a small region' (Taçon 1989a:116); in contrast, Edwards suggested that every shelter has a name and associated information or stories (Edwards 1979:101; see Taçon 1989a:116-117) For telling example of recording variation and the definition of a site comes from 1978, when Toby Gangali and Frank Djandjul, senior Mirarr men, explained that the name of the area in the northern part of the Jabiluka is Ngarradj Warde Djobkeng (Cockatoo Dreaming) (Chaloupka 1978; see also Allen and Barton 1989). Chaloupka, accompanying them, recorded 11 rock art sites within this area (Chaloupka 1978), while the Mirarr Gunwarddebim project recorded 33. These different recording methods and site definitions produced different results; yet, to the Traditional Owners of those sites it was understood as one place. This example is pertinent when considering Dynamic Places and clusters of Dynamic Figure sites (see Chapter 9).

In 2015, upon request from the Mirarr, the Mirarr Gunwarddebim project team surveyed further south in Mirarr Country in the central valley of Djidbidjidbi (Mount Brockman) massif. We recorded 157 sites, although we are aware of more unrecorded sites in the area. As the entire Djidbidjidbi massif was not surveyed in the same manner as Jabiluka it cannot be subjected to the same statistical analysis. Therefore, these sites have not been included into this study; although, through this thesis specific sites that contain pertinent Dynamic Figure art scenes or motifs are noted for comparison and discussion (see Chapter 9).

### 5.2.2 Electronic rock art recording method

Sites were recorded using an electronic form developed by the Mirarr Gunwarddebim Project team and Environmental Systems Solutions (ESS). The form was developed within the CreativityCorp Mobile Data Studio software for the Apple IPad and Samsung Galaxy tablets (Figure 5.1). At the end of each survey day, the recording form data was uploaded onto a data management system developed by ESS.

The majority of information recorded about each cultural site during the survey was not used during this research; therefore, this discussion here is limited to the relevant section that were used to answer the first subsidiary research question concerning ritual places. A Garmin *Etrex 30* handheld device was used to record the GPS location of each site.

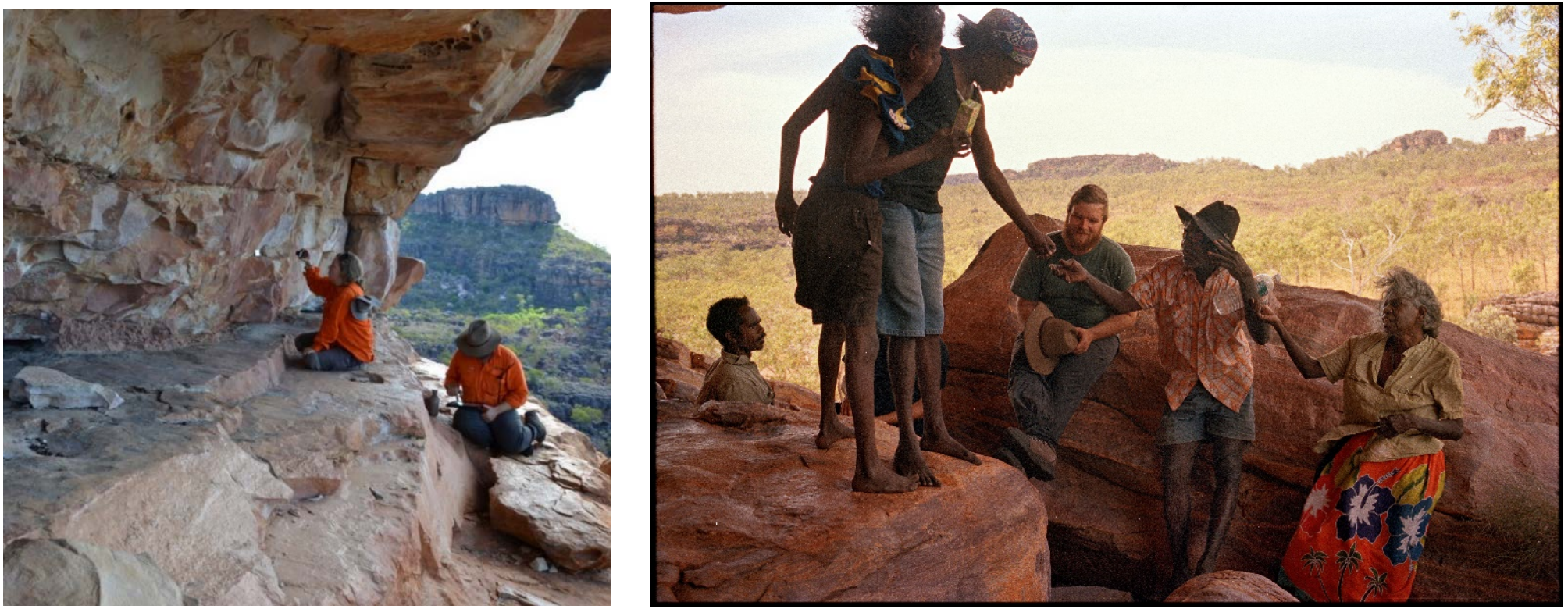

*Figure 5.1 I. Domingo Sanz and I.G. Johnston recording a rockshelter (left). M. Djandjomerr, M. Nango and family looking at stone artefacts (right) Photograph: C. Hayward and M. Abbott respectively).*

The data recorded in the Mirarr Gunwarddebim project recording form included the GPS location of the site, members of the recording team, time of recording, elevation above sea level, site description, site size, orientation, location in the landscape, types of art present, other material culture present and evidence of usage. These site recording categories produced a baseline record of Jabiluka's rock art, covering the most significant information about each site but not recording each specific motif in detail (Brady et al. 2015:1-2, 7-9; see also Bednarik 2007; Domingo Sanz 2014). Table 5.1 is a combination of data collected from the site recording form which was used in this research. Some categories were added to the site recording form, shaded in grey, because they were incorporated in the location results of Chapter 6 and assisted with better understanding Dynamic Figure art sites. These were: presence of human figure(s), count of scenes and count of motifs.

**Table 5.1. Data categories extracted from the Mirarr Gunwarddebim Project recording form**

| Latitude | Longitude | Site name | Elevation | Site type | Site size | Scenes | Motifs | Orientation | Location | Human figures |
|---|---|---|---|---|---|---|---|---|---|---|
| -XX | XX | I10007 | 40m | Rock shelter | Small (1-5m) | 2 | 5 | North | Outlier Base | TRUE |

Dynamic Figure art scenes and motif counts were added to the site recording data after the second detailed recording phase to understand the instances of art projection and the time spent painting at each site. *Human figures — (TRUE/FALSE)* was added to record sites absent of Dynamic Figure human figure motifs but with Dynamic Figure material culture stencils, of which one was recorded.

### 5.2.3 Photographic recording method

Accompany the site recording form was an extensive photographic record of the site and its rock art. This included context photographs of the site and site area, photographs of individual panels and individual motifs (see Figure 5.2 and Figure 5.3). The development of high resolution digital cameras has made extensive photograph records of rock art sites possible and the quantity of photographs taken at each site has become typical of recent rock art recording projects (see Brady et al. 2015:2; Gunn and Whear 2007:9; McDonald 2014). This stands in stark contrast to the early film photographic records of rock art sites where researchers had to priorities specific panels or motifs.

Photographs were taken with a variety of cameras including Canon D5, Canon D7 Canon S90 Olympus OM, Nikon D5100, Leica M9 each with a combination of lens sizes and apertures. Photographs were taken throughout the day with and without flash and with and without an IFRAO scale. Where possible the photographer would ensure they were perpendicular with the wall or motifs; however, this was not always possible because of the form of specific sites and the placement of certain motifs (e.g. McDonald 2014).

*Figure 5.2. Context photograph of site I10007.*

*Figure 5.3. J.A. Hayward recording a stencil motif.*

### 5.2.4 Site recording summary

The first recording phase outlined in this section was used to generate the results in Chapter 6. I used the ARCGIS (v10.5.1) software to map the recorded sites upon the Jabiluka landscape, and in later instances western Arnhem Land. I also employed GIS analysis to ascribe different point values to each site depending upon the attributes of that site. A point's value would depend upon the information that needed to be displayed and was drawn from the spread sheet from which Table 5.1 is based. For example, when art densities were compared (i.e., number of motifs at a site) the size of a point was scaled by factors larger or smaller depending upon how many motifs were recorded at that site. If different types of sites were compared, e.g., sites with or without Dynamic Figures, the colour of the point would represent true or false results. The maps developed illustrated different information about Dynamic Figure art and its location in the landscape. This analysis ultimately indicates that Dynamic Figure art was most likely associated with areas of ritual practice within a wider cultural landscape (see Chapter 6).

## 5.3. Dynamic Figure recording method and approach

The second recording phase of this research focused specifically upon the Dynamic Figure art within Jabiluka, which are only a significant sample of all the Dynamic Figure art of western Arnhem Land (see also Chaloupka 1984a). Sites identified to have Dynamic Figure art present during the field survey were marked for detailed recording with the Dynamic Figure recording form. This recording form was developed from the literature review in order to answer each of my research questions. In Australia, the practice of creating specific recording forms to answer research questions about rock art is becoming more common as archaeologists undertake more in depth research of specific rock art types; although this practice is and has been typical in Europe (Bednarik 2007; Brady et al. 2015:3; Hayward 2016; Helskog 2012:45; Miller 2016; Travers 2015). This detailed level of recording has never been undertaken of Dynamic Figure art until this research. In this section, I outline my recording method and approach to specific attributes of Dynamic Figure art and in the following sections present the parts of the recording form pertinent to investigation Dynamic Figure scenes (5.4) and motifs (5.5).

The difference between the survey methodologies of previous researchers and the Mirarr Gunwarddebim project has been discussed above; however, it is important to

stress the key difference between these methods, that is the systematic and detailed recording of every Dynamic Figure site, scene and motif. As described in Chapter 3, previous researchers worked in small teams, pairs or individually and often recorded sporadically or predictively across a survey area. They would often focus on sites within that area that could answer pertinent chronologically focused questions. For example, the studies of Mount Gilruth (Brandl 1988; Chaloupka 1977; Haskovec 1992; Lewis 1988), Twin Falls (Chippindale and Taçon 1993) and Djidbidjidbi (Chaloupka 1984b; Chippindale and Taçon 1993; Lewis 1988) produced comparable and testable chronologies. However, these studies were also used to discuss, via Dynamic Figure art, broader questions of social organisation, ritual and culture. Their data collection method was less suited to answering these broader types of questions of Dynamic Figure art, such as those posed in this thesis.

The Dynamic Figure form has a hierarchical structure of information (Figure 5.4). Sites, defined by the Mirarr Gunwarddebim recording process, can have one or more scenes of Dynamic Figures and each scene can contain one or more Dynamic Figure motifs. The definitions of scenes and motifs are explained in Sections 5.4 and 5.5 respectively. This approach best allowed for intra-site, intra-scene and intra-motif comparisons as each recording level of information could be related to each other level. For example, I10007:5:2 refers to the second Dynamic Figure motif of scene 5 at site I10007 (see Figure 5.4). Within this recording structure scenes ‘equate to instances of art production’. A scene is interpreted as one Dynamic Figure artist painting on one occasion; therefore, a site with two scenes equates to two instances of a Dynamic Figure artist painting rock art. A motif is one unit of time spent panting by a Dynamic Figure artist; therefore, scenes with six motifs were interpreted as taking twice as long as scenes with three motifs Pragmatically, all motifs were assumed to take the same length of time to paint. These interpretations of scenes and motifs were employed to investigate questions such as: how often artists chose to paint at particular sites, how often they painted certain senses and how much time they spent painting in particular areas.

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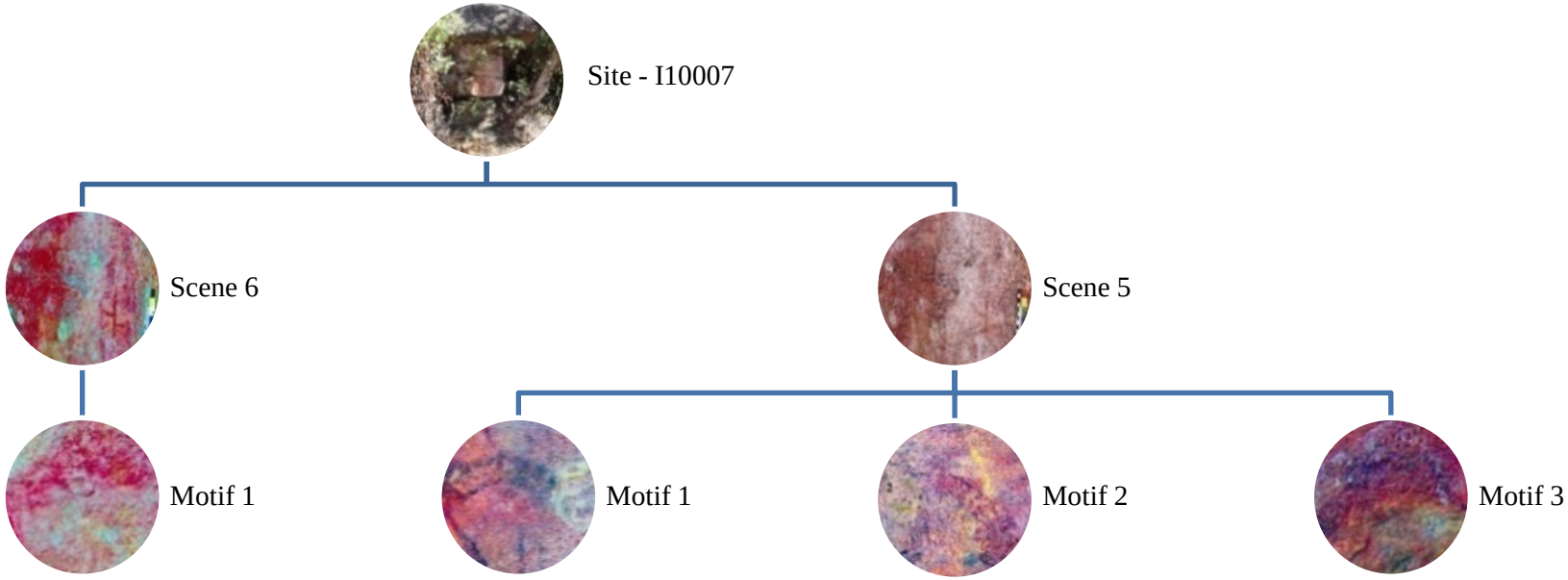



*Figure 5.4. Dynamic Figure recording form hierarchy, using site I10007 and scenes 5 and 6 as examples.*

### 5.3.1 Recording responses

Where presence and absence observations were made of motifs and scenes three possible responses could be recorded: True, False, Not possible. For example, is the motif a therianthrope? These responses were developed to account for motifs or scenes where preservation prohibited completely recording each category in the recording form. Following this, not applicable, was used where the question is answered by the previous false response. Other categories had classificatory descriptive responses, for example: straight spear or barbed spear; sexual organs: male or female. These categories were developed from the literature review and observations during the survey of Jabiluka.

**Table 5.2. Example of possible recording responses**

| Motif | Does the motif carry a boomerang? | What type of boomerang does the motif carry? |
|---|---|---|
| 1 | True | Uneven (#7 type) |
| 2 | False | Not applicable |
| 3 | Not possible | Not possible |

### 5.3.2 Approach to type categories

In the scene and motif recording forms certain categories had more complex type classifications, beyond male or female. These categories were headdress, hair adornments, therianthrope (head) and pubic skirt. Through the recording process types were added to developing typology or counts were made when recurring headdresses or hair adornments were observed. Typological classification has a long tradition within archaeology and rock art studies (Renfrew and Bahn 2004:118; see Section 4.2). The process at its simplest involves grouping like material culture objects together. However, a key problem of any typological classification is that the group created may not reflect any meaningful distinction (Hayward 2016:68; Miller 1982:19; Renfrew and Bahn 2004:118).

Within this study several factors mitigate the creation of an unmeaningful typology. First, as Hayward (2016a:69) argued, within studies of rock art and typology, research often focuses upon what the artist depicted not upon how the image was painted. This allows for sub types to be incorporated into the system which accommodates for artistic

variation, instead of excluding outliers (Hayward 2016a:69*)*. As Dynamic Figure art is highly recognisable (see Chapter 3), I could quite confidently record each motif and include the relevant material culture objects into the typology, none were excluded. Second, myself and others have previously argued that the variation observed within headdresses, and the other type categories, constitute significant choices by artist as no other material culture type in Dynamic Figure art has similar variation (see Johnston 2017; Chippindale et al. 2000; Taçon and Chippindale 2001a). Moreover, each of the type categories have a demonstrated ethnographic significance, where variation constitutes active choices and information exchange by artists or makers (Taçon and Chippindale 2001a). Therefore, variation in each typology is meaningful. Third, I adopted a conservative grouping strategy based upon descriptive categories, e.g. oval, tassel, fan and so forth. Where two oval headdresses had slightly different ends I still grouped them together as this may have been artistic variation oppose to purposeful choice. The approach preferences homogeneity in results. As my research questions are mostly examining variation, I determined it best to only record overt and clear heterogeneity or demonstratively chosen artistic variation. Finally, these typologies only constitute part of this study and, where possible, arguments concerning variation is supported by other data.

### 5.3.3 Approach to fauna

This research focuses upon depictions of human figure motifs and did not record Dynamic Figure style fauna, unaccompanied by Dynamic Figure motifs. Except for fauna that exhibited the combined perspective attribute (see Section 3.10); in short, I am not satisfied that all the diagnostic features for identifying Dynamic Figure fauna have been defined.

The fauna that did accompany Dynamic Figure motifs were recorded into animal classes such as macropods and snakes (Figure 5.5). For the macropods, a further sex category was included, pouch (female) or testicles (male) (see Chapter 9). Following Rosenfeld (1984:401) no attempt was made to identify species and taxa of fauna, e.g. macropod not wallaroo or kangaroo, as in Dynamic Figure art there are too few diagnostic attributes (see Section 3.10). There were two exceptions, emus and thylacines, as their form is highly recognisable and they cannot be confused with other animal species in northern Australia during the Dynamics Figure art period.

*Figure 5.5. Example of Dynamic Figure macropod from site I10125 at Djidbidjidbi exhibiting the combined perspective attribute in its arms.*

### 5.3.4 Approach to stencils and prints

The association between stencils, prints and Dynamic Figure art has been well established (see Section 3.11); however, it was still worthwhile to reassess this association because of the systematic recording and survey of this project compared to previous research. In the scene recording form only stencils or prints that were in very close proximity to or superimposed by Dynamic Figure motifs were recorded. These stencils and prints were compared to the greater collection of stencils recorded by the Mirarr Gunwarddebim project. Where possible, stencils and prints were also categorised into left or right; form: open, two middle fingers closed (2MF), three middle fingers closed (3MF); and material culture type: boomerang, dilly bag, spear). These categories were established from the literature review (see Section 3.11).

### 5.3.5 Approach to colour

The colour of Dynamic Figure art was not analysed because no suitable method for accurately comparing different interpretations of colour was devised. While it is typical to record the colour of rock art (e.g., red, yellow, white, black; monochrome, bichrome), Dynamic Figure art is red, excluding very rare examples (see e.g., Chaloupka 1993:106). I determined that subjective observations of, for example, red,

light red and dark red would not contribute to this research in a meaningful way. The issues observed:

- The different natural light levels at the time of recording and camera types, specifically their digital sensor, used by recorders prohibits any computer analysis of colour profiles through software analysis.
- Lewis has observed that the colour of pigments can change over time, influenced by the taphonomic conditions at a site (Figure 5.6). It is possible that all Dynamic Figure art pigment colours have change to a greater or lesser degree since their application upon the rock surface. Therefore, intra-site compassion of pigment colours would not have provided a useful data source.

*Figure 5.6. Motif from Lewis Site 17: Big Dynamic Site, showing changing pigment colour (Photograph: Lewis 2016).*

### 5.3.6 Tracing and image enhancement

The tracing and sketching of rock art has long been a staple of rock art recording, especially for publication where it is employed to illustrate more clearly the form of motifs to audiences (e.g., Breuil 1958; Vinnicombe 1967). This was important as the publication quality of photographs in academic journals was often poor and predominately only black and white, resulting in rock art motifs often being difficult to recognize from a photograph alone. As a result tracing of rock art was a typical practice; however, researchers also regularly painted and sketched rock art as part of their recording process (see Layton AIATSIS MS 595, Macintosh AIATSIS MS 3774).

Tracing of image initially involved placing transparent film or tracing paper on a rock surface and using a felt pen or pencils to draw the image (e.g., Chippindale and Taçon 1993; Vinnicombe 1967), these images were then photocopied and became a monochrome or grey-scale duplicate of the rock art motifs. However, placing any material on a rock surface has been observed to damage rock art and this tracing method is no longer practiced (see Bednarik 2007:99–104; Brady et al. 2015:15). Another practice was for researchers to project their slides onto tracing paper or though light boxes and trace the rock art from the projection (e.g. Chippindale and Taçon 1993; Lewis 1988; Frederick pers. comm. 2016). These methods have been replaced by digital tracing using computer software and high resolution photographs; however, these all tracing methods are subject to similar issues of interpretation by the tracer (see Brady et al. 2015:17).

Tracing in any manner should not be considered an 'objective' or 'neutral' representation of rock art images (Chippindale and Taçon 1993:34). As Chippindale and Taçon argued, tracings are made from flat projections of uneven rock surfaces, the tracer makes decisions about which lines are superimposed by others (often indicated via dotted lines) and importantly all tracings are the subjective view of the tracer (Chippindale and Taçon 1993:34; see also Brady et al. 2015:16). All tracings are a way of illustrating what the rock art recorder believes they have seen and recorded at a site.

The tracings in the thesis were produced using Adobe Photoshop CS6 using a technique taught to me by Prof. Ines. Domingo Sanz (see Domingo Sanz 2014; Domingo Sanz and Lo´Pez -Montalvo 2002). The tracings were produced using the Photoshop 'colour select tool', a tool which highlights pixels that contain a similar colour to the one selected in a given area, the allowable spectrum of colour selection is set by the user. The selected pixels become a separate layer of the image and can be converted to monochrome. This produces a black and white reproduction of the motifs and scenes without a background for easier illustration (Figure 5.7; see also Brady and Gunn 2012:632).

In this study, I made use of the image and colour enhancement software D-stretch, developed by Harman (2008), where Dynamic Figures were faded or in a state of poor preservation (Figure 5.7). Image enhancement is not necessarily a new phenomenon in rock art research, as early researchers who used film photography experimented with lens filters on their cameras and enlargers; however, image and colour enhancement has become more prevalent, practical and easier since the uptake of high resolution digital

cameras (Brady 2006; Brady and Gunn 2012; Domingo Sanz and LóPez-Montalvo 2002). To an observer, the D-stretch software manipulates photographs by enhancing the spectral variance between the colours in the image. This means that each colour, especially faded colours are more visible (for a step by step guide see Brady and Gunn 2012:632) A full theoretical and mathematical explanation of D-Stretch is available at the software's website (http://www.dstretch.com; see also Brady 2005, 2006; Harman 2008).

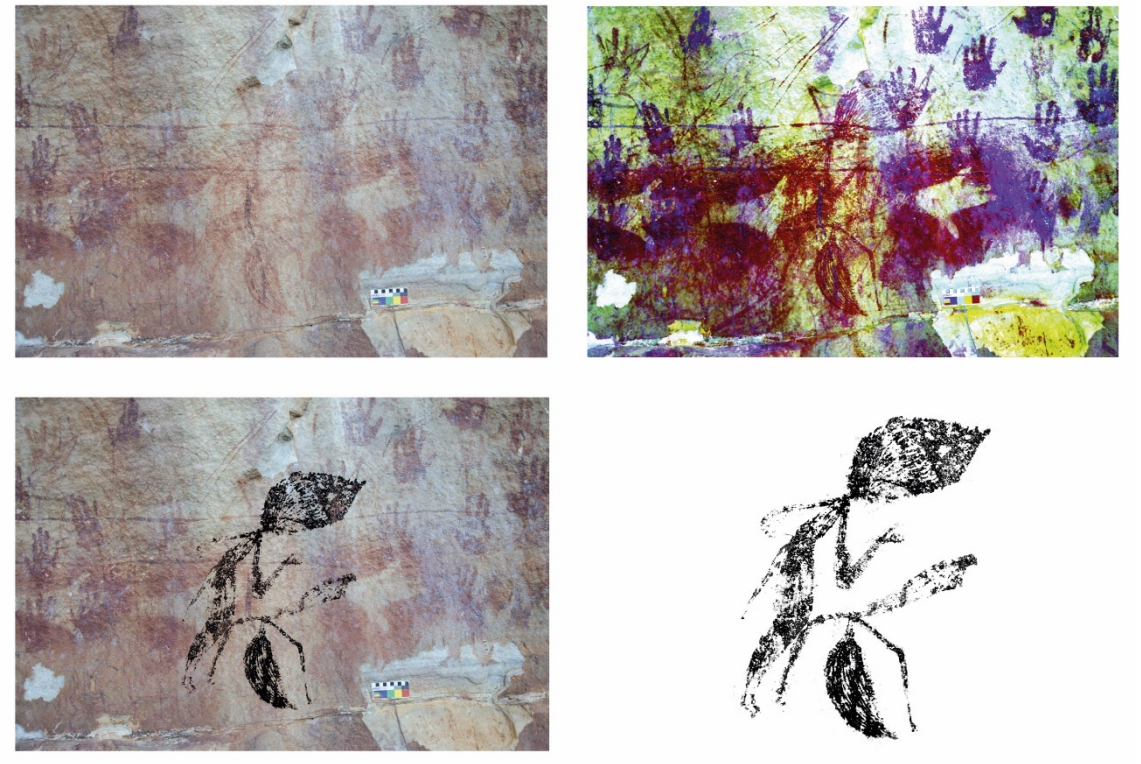


*Figure 5.7. Reproduction of Figure 6.5 from Johnston et al. (2017) Images: panel (top left); panel with colours enhanced with D-stretch (top right); panel with Dynamic Figures traced in black using Photoshop CS6 (bottom left); traced Dynamic Figures (lower right).*

### 5.4. Dynamic Figure scenes

The scenes in which Dynamic Figures are engaged is one of their most significant and informative attributes as these narrative compositions provide information about ritual practice as well as material culture absent from other archaeological data sources (e.g., Johnston 2017; May et al. 2017a). However, not all rock art is depicted in scenes and it is worthwhile to consider how scenes are understood in rock art studies and how they are examined with this research.

The broadest definition of a scene, as relates to rock art, is that a scene is a collection of motifs (animals, human figures, lines, dots etc.) that are painted in a narrative composition and observed as a whole – a scene is the sum of its component motif parts (e.g., Dobrez 2011:75). Dobrez emphasised and argued that 'a scene implies *doing'* and a sense of space (Dobrez 2011:75,82-83). In this way, scenes depict action and imply an element of time and space. Bahn (1998:195) argued that in the right contexts researchers can distinguish between motifs that are painted close to each other and those that are intentionally composed into a narrative scene – I, after Brandl, argue that in Dynamic Figure art the skill of the artists to paint figurative compositions make identification of intended scenes possible (Brandl 1988:173; see also Chaloupka 1993:106; Chippindale et al. 2000; Johnston 2017; May et al. 2017a; Taçon and Chippindale 2001a). However, Dobrez argued that understanding the original meaning or intention of rock art, in this case the purposeful creation of a scene and the information it intended to convey, is extremely difficult, even to people present at its creation; he argued that during the process of painting aspects of the intention may have change or developed and this uncertainty is exacerbated the further removed one is from the time of painting (Dobrez 2011:71). He argued identifying associated motifs is inherently subjective and therefore defined a scene as 'the observer's perception of something happening', he implied that rock art researchers should not attempt to identify scenes in rock art (Dobrez 2011:81-83). Dobrez also concluded [conceded] that:

> It is true that in many cases, and not least that or rock art, access to it [original meaning/intention] may be severely limited. But it is certainly there in the artefact. (Dobrez 2011:71)

To this end, Dobrez argued that researchers should not be fixated on the concept that 'full meaning = original meaning', as an understanding of part of the meaning of a scene is still very important and possible. Similarly, Bahn argued that '…*what one can*

*certainly do is to put forward observations, interpretations, and hypotheses about the images, which can be evaluated and eventually discarded when something better comes along*' (Bahn 2002:92). Therefore, this thesis has a clear method of how scenes were described and interpreted (see also Chapter 8) and presents analysis that can be evaluated in future. The discussion of the rock art scene at Injalak hill, described in Section 4.5, is a telling example of the observation analysis possible of west Arnhem Land rock art. The Aboriginal painters and researchers both identified more and less, respectively, of the intention of the rock art scene and due similar but differently informed conclusions about the scene (May and Domingo Sanz 2010).

Following May and Domingo Sanz (2010), I recorded scenes as one or more human figure or therianthrope motifs 'performing a common action, usually with a defined time and certain internal coherence, that can be described even if the meaning is unknown' (May and Domingo Sanz 2010:37; see also May et al. 2017a). This definition allows for scenes to be interpreted as instances of art production as well as narrative compositions.

Scenes form the second level of the hierarchical recording framework (see Figure 5.4). Therefore, the scene data pertains to each of the motifs within that scene, e.g., animals involved in the scene, activity being depicted, associated stencils, etc. Other categories relate to the whole scene, e.g. number of motifs per scene, range of headdresses etc. The most significant categories of the scene recording form were the *activity, range of headdresses or hairs adornments and Scene action indicators*, which were used to answer the final subsidiary research question (see Table 5.3 and Figure 5.7). The total number of motifs category reflected scenes where I could observe the presence of additional human figures but could not record them in a meaningful way, e.g., only the legs remained.

**Table 5.3. Dynamic Figure scene recording form (example from I1007)**

| Site label | Scene number | Description of scene | Dynamic Figure description | Number of individual Dynamic Figures | Number of partial Dynamic Figures | Figures per scene | Associated animals | Activity | hand stencils | Material culture stencils | Stencil superimposition | Range of Headdresses or hairstyles | Headdress types | Scene action indicators (dots, fires etc.) | Superimposition |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0007 | 5 | Three Dynamic Figure motifs and one partial motif with an emu. | Smaller less detailed Dynamic Figures | 3 | 1 | 4 | Emu | Hunting | 3MF RH, RH, LH | Symmetrical boomerang | FALSE | TRUE | oval, rectangle, leaf | FALSE | Under Emu |

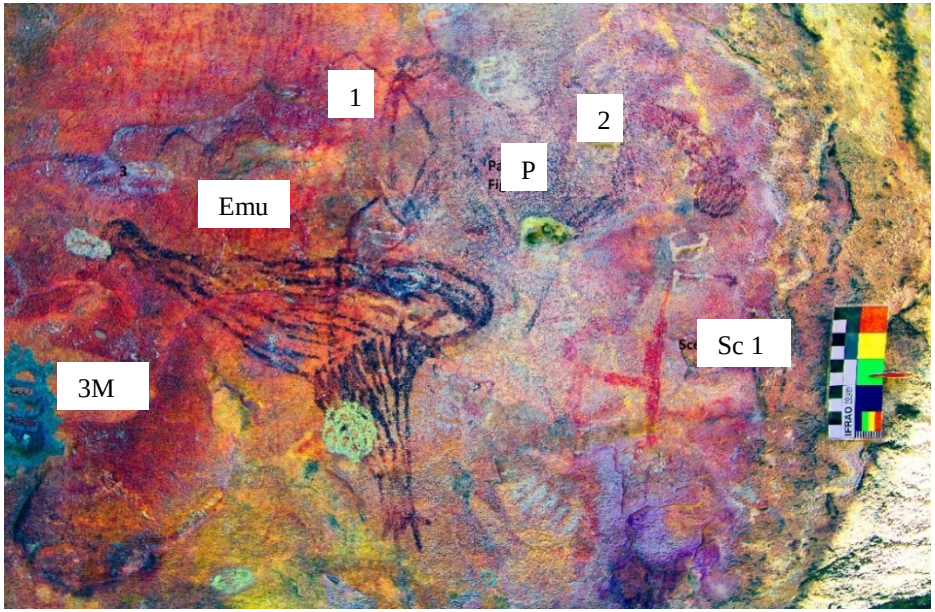



*Figure 5.8. Photograph of a Dynamic Figure panel, I10007:5, motifs are labelled and enhanced with D-stretch (crgb setting - see Section 5.3.6). Labels: motifs (1,2), another scene's motif (Sc 1), stencil (3MF), partial motif (p) and emu.*

The most interpretive aspect of the recording form is the activity category. To mediate inconsistency as much as possible, I applied descriptive categories developed from the literature review and initial observations of Jabiluka Dynamic Figure art. The activity is only one category that does not influence other parts of the recording form. Also, as noted in the theoretical framework, Dynamic Figure art is highly figurative and, as I have argued, interpreting broad activities from these scenes is not beyond the bounds of an uninitiated observer.

### 5.5. Dynamic Figure motifs

Motifs are the base level of the hierarchical recording process and have the largest number of categories and supplementary tables; however, each level of information relates back the site level. Each scene was recorded, wherever possible, starting with the motif in the top left of the scene and continuing in a clockwise direction. This level of detailed analysis has not been applied to Dynamic Figure art in the past and has be used sparsely in rock art studies of human figures more generally in Australia until recently (see Hayward 2016; Travers 2015). The breakdown of the recording form is shown in Figure 5.9.

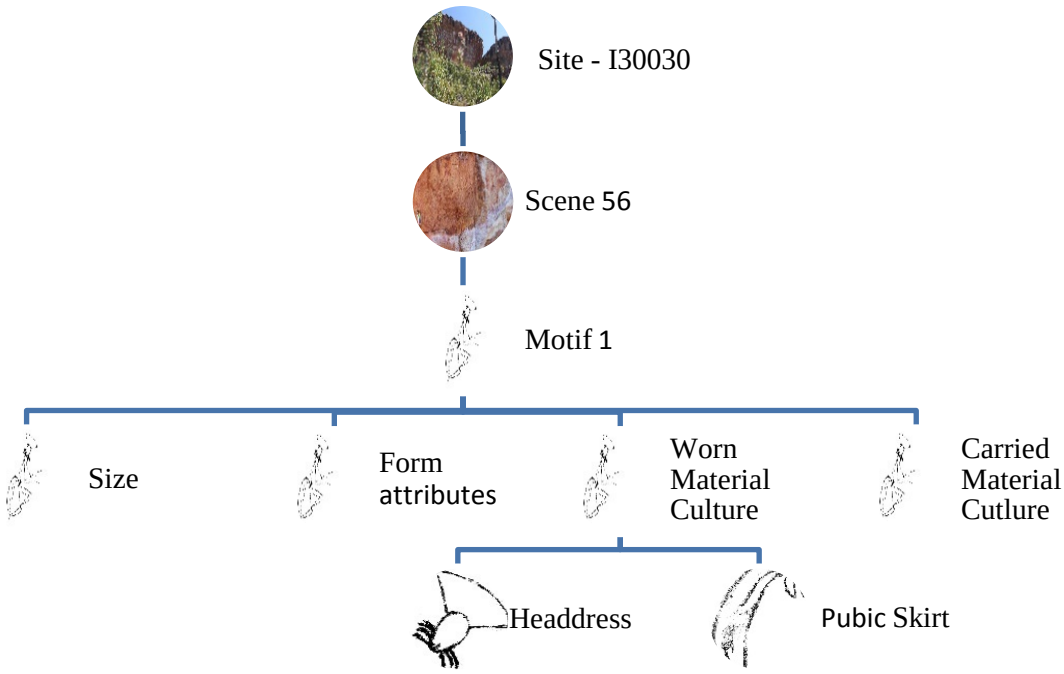



*Figure 5.9. Example of motif recording hierarchy, site I10007: scene 56: motif 1.*

Rock art studies which analyse distinct attributes and size have often focused on animals and have had two major aims: (1) identifying specific animal species and how they are can be distinguished from similar looking species (e.g., Rosenfeld 1983; Taçon 1989; Tasire and Davidson 2015), and (2) trying to identify mega fauna species (see Brandl 1980; Clegg 1978; Lewis 1986,2017). This thesis applies a similar scientific rigour to human figure motifs.

The attribute categories were developed from the literature review and observations during the survey of Dynamic Figure art in Jabiluka. Each category was recorded by observation and ascribed true (present) or false (absent). As noted, some categories also had an additional typological response associated with them (e.g., Section 5.3.3). The results provided a set of attributes and information about the Jabiluka Dynamic Figure motifs which were reported in Chapter 7. These were used to answer the primary research question and the subsidiary question concerning material culture. The tables below 5.4, 5.5, 5.6, 5.7 and 5.8 are each of the attributes and categories recorded for the Dynamic Figure motifs (see also Figures 5.10, 5.11 and 5.12).

**Table 5.4. Motif size recording form (example from I10046:13:1)**

| Site | Scene | Figure | Groin to neck (body) | Combined arm (forward) | Combined arm (backward) | Combined leg (forward) | Combined leg (backward) | Headdress (height including head) | Head height | Headdress height (no head) |
|---|---|---|---|---|---|---|---|---|---|---|
| Figure 5.10 measurements | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| I10046 | 13 | 1 | 11.6 | 25.4 | 24.2 | 20.6 | 20.0 | 4.8 | 4.0 | 1.0 |

**Table 5.5. Motif attributes recording form (example from I10046:13:1)**

| Internal patterns | Arm poses | Head depicted | Sex defined | Therianthrope | Neck type | Bumps on arms | Arm muscles | Hands Type | Feet Type | Leg splits | Leg muscles | Leg forms | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lines | Full power swing | TRUE | Female | FALSE | Defined neck | FALSE | Parallel line arms | Point | Fully defined foot | TRUE | Fully defined legs | FALSE | Very large strong legs |

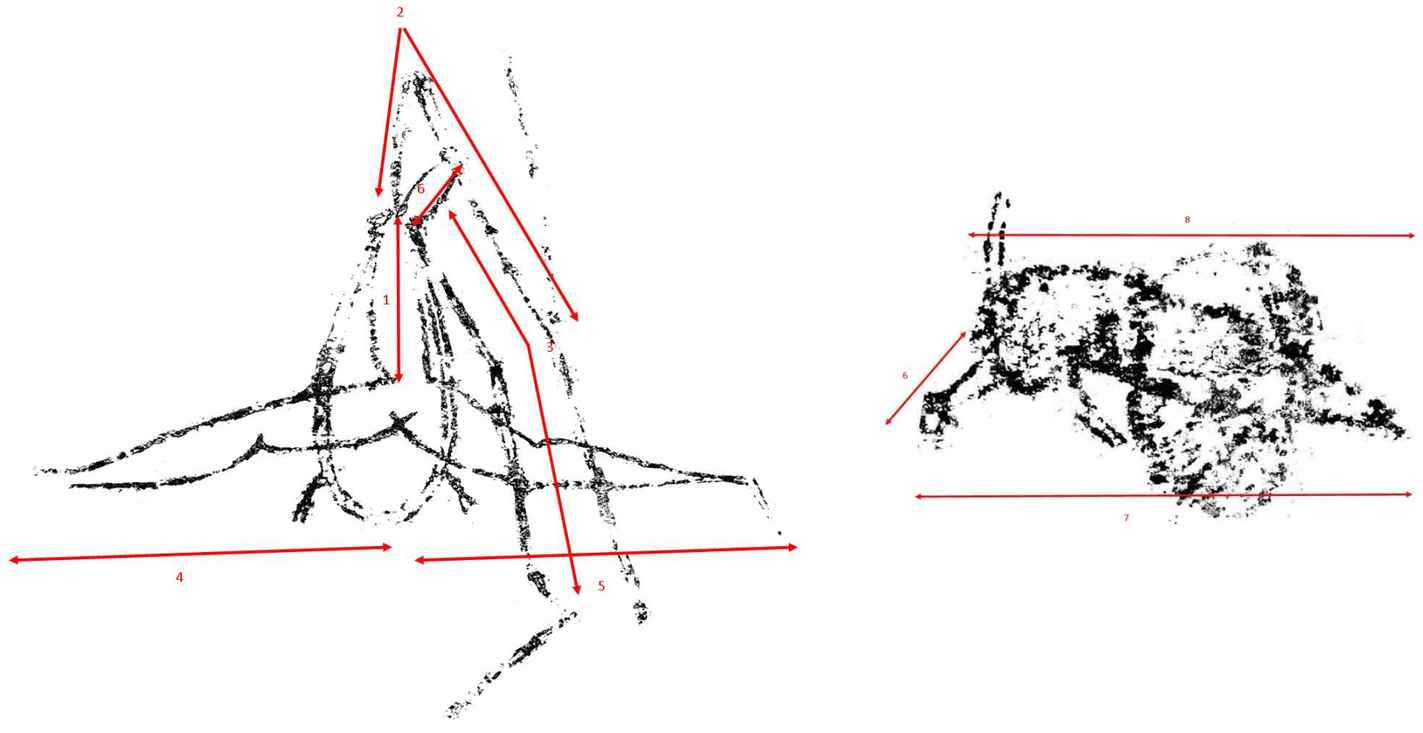



*Figure 5.10. Left is a traced reproduction of motif I10046:13:1, which has the indicators 1 to 5 representing each of the measurements taken. Right is a traced reproduction of a headdress with the indicators 6 to 8 from I10046:75:3.*

**Table 5.6. Worn material culture recording form (example from I30030:56:1)**

| Headdress type | Headdress Form | Headdress infill | Description | Necklets | Dilly Bag | Arm bands | Hair belt | Description | Pubic Covering | Pubic covering type | Describe |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.1 | Line form | none | A large fan shaped headdress | TRUE | FALSE | FALSE | TRUE | two half circles | TRUE | 10.1 | large feather like skirt |

**Table 5.7. Headdress recording form (example from I30030:56:1)**

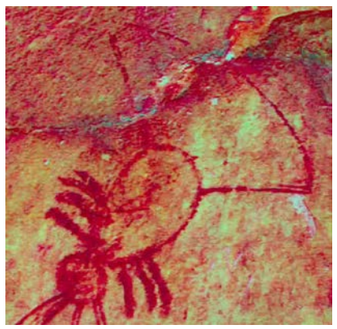
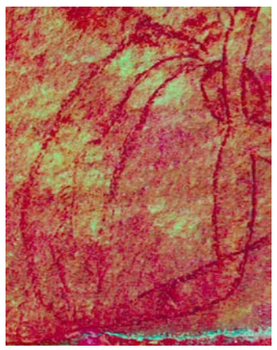
| Site | Scene | Motif | Headdress Image | Description | Type (initial) | Type (name) | Form | Number | Traced image | Hair dashes |
|---|---|---|---|---|---|---|---|---|---|---|
| I30030 | 56 | 1 |  | A large fan shaped headdress, wider but not as tall as other Type 7 examples | 7.1 | Fan | A | 2 |  | TRUE |

**Table 5.8. Pubic skirt recording form (example from I30030:56:1)**

| Site | Scene | Motif | Pubic Cover Image | Description | Type | Traced image |
|---|---|---|---|---|---|---|
| I30030 | 56 | 1 |  | A long oval or rectangle, very similar to type 10. | 10.1 |  |

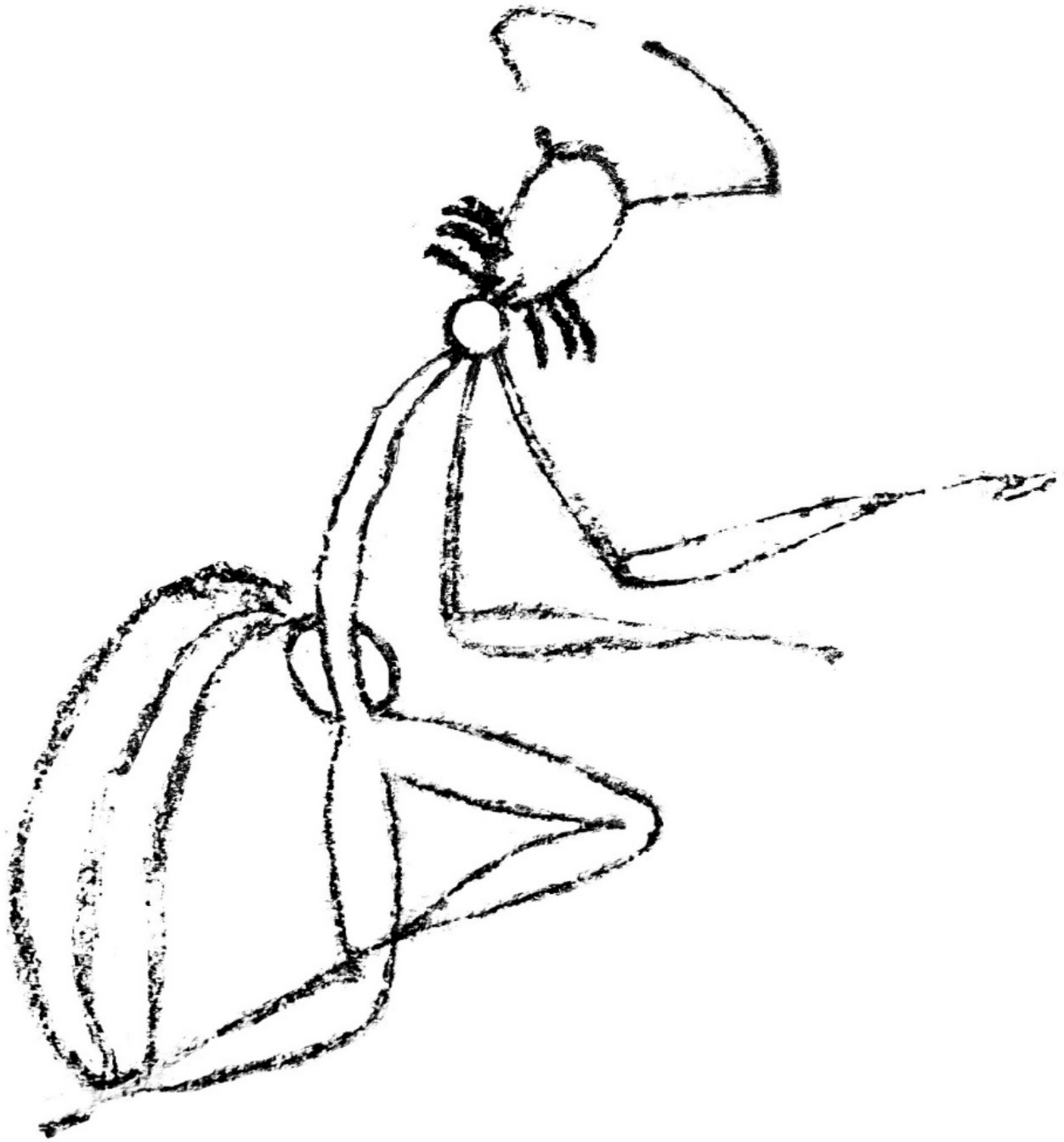


*Figure 5.11. Traced reproduction of motif I30030:56:1 2, worn material culture recording example (no scale).*

**Table 5.9. Carried material culture recording form (example from I10046:75:2)**

| Spear | Spear type(s) | Size of spear | Held Vertically | Description of spears | Boomerang | Boomerang type(s) | Size of boomerang (forward) | Size of boomerang (backward) | Collection of boomerangs bunch at hand | Description of boomerangs | Axe | Size of axe | Club | Size of club | Short stick | Size of stick | Unknown ball object | Small hand held object |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FALSE | not applicable | not applicable | TRUE | short stick in back hand | FALSE | not applicable | not applicable | not applicable | not applicable | not applicable | FALSE | not applicable | FALSE | not applicable | TRUE | 26.71 | TRUE | FALSE |

*Please note: the site, scene and motif details are removed from this table so it fits on a single page.*

*Figure 5.12. Traced reproduction of motif I10046:75:2, carried material culture recording example (no scale).*

### 5.6. Methods of motif and scene analysis

Two statistical methods of analysis were applied to the motif and scene data of this research. These methods were employed to compliment the formal archaeological analysis (discussed above); which provided counts of certain attributes of the motifs and scenes, such as human figure form or material culture types. This section details the multivariate analysis methods used to investigate the data produced from this formal analysis and investigate trends and groups within this data.

In studies of rock art, quantitative research and analysis is often employed in response to the concerns associated with directly interpreting rock art and the perceived understanding of objectivity associated with quantitative methods (Conkey 2001:280; Ross 2003:98). Conkey argued that quantitative studies have been useful for empirically challenging long held notions in rock art and archaeological discourses, e.g., hunter gatherers mostly depicted animals they ate (Conkey 2001:280). However, as the data collected and generated by researchers is influenced by their decisions, methodology and research agenda one must as be critical of quantitative results as much as the interpretation of a rock art scene (Ross 2008:99). This research employed two multivariate methods of analysis which have proved useful for comparing large amounts of data with numerous variables or attributes (see McDonald 2008; Ross 2003:101-103; Taçon 1989; Taçon et al. 1996; Travers 2015; Wilson 1998,2004). Multivariate analysis has also been used to illustrate the relationships (trends) between recorded variables in rock art data (Franklin 2004:33). The trends observed within Dynamic Figure art were used to answer aspects of each of the research questions.

#### 5.6.1 Metric motif analysis

The metric motif data consists of the measurements recorded for each individual motif from the first section of the motif recording form. This metric data was analysed using GenStat (v18.1.0.17005) software which performed multiple regression analysis. Multiple regression analysis is a ‘method of describing the relationship’ between multiple metric variables (Payne 2015:3,17). In relation to this study, I have used this analysis to examine if a meaningful relationship exists between the various measurements of Dynamic Figure human figure motifs. Or, do a motif’s arms increase proportionally to its body and is this relationship relatively consistent across the Jabiluka assemblage?

I foreshadowed that the metric motif analysis would not be particularly insightful to isolate Dynamic Figure types which could be developed into a Dynamic Figure chronology in an early study (see Johnston et al. 2017). This is because Dynamic Figure artists specifically used size as part of their narrative constructions within scenes, e.g. some motifs are bigger than others in one scene (see Johnston et al. 2017). This precludes motifs grouped be size being a meaningful type, despite Chaloupka's (1993:106) use of size in his Dynamic Figure chronology (see Section 3.5; Johnston et al. 2017).

I determined that an insightful investigation was to examine the relationship between the proportional size of motifs and compare this to the proportional size of the headdresses they wore. Determining if headdresses were not painted proportionally larger under the same relationship to increasing body or arm length supports the contention that artists intended to paint specific headdress types on certain motifs. In short, I examined if big motifs have the biggest headdresses or is headdress size more influenced by the intended ritual messages of the artists. Other material culture objects were not recorded frequently enough to examine in similar manner.

### 5.6.2 Motif and scene analysis

The final analysis technique employed was correspondence analysis (CA) also using the GenStat (v18.1.0.17005) software. Correspondence analysis applies a chi-squared test to measure the distance between variables or, in this thesis, how often variables occur together (Wilson 2004:176; see also Harding and Payne 2015; Ross 2003:101-103). When multiple variables are tested this technique is called multiple correspondence analysis (MCA). After the software applies a chi-squared algorithm it displays points on XY graph were the proximity between points represents the relationship between attributes. Closely plotted attributes on the graph indicates they were more often recorded in the same motif or scene, distance between attributes indicates the opposite. MCA or CA analysis was applied to the scene and motif data, where a meaningful relationship could be determined. For example, testing whether a scene depicting sex and female motifs group together would be an unmeaningful plot, as females made up a small percentage of the overall sample and for a scene to be identified as depicting sex it needed a female motif. A more useful test would be if a certain therianthrope type more often had a specific weapon type, spears or boomerangs, as this trend was observed by Taçon and Chippindale (2001a). The value of this CA is that it could show that even though macropod headed therianthropes are more likely to have boomerangs, all

therianthropes are more likely to have boomerangs; therefore, demonstrating that although these variables group together this result is not overly significant. This type of analysis replicated studies of rock art from other regions of Australia (McDonald 2008; Ross 2003; Taçon et al. 1996; Travers 2015).

Correspondence analysis was employed to investigate two primary questions:

1. Do relationships exist between attributes of Dynamic Figure motifs?
2. Do clusters and groups exist within the data? Specifically, are there distinct types of Dynamic Figure human figures represented in the Jabiluka data?

The correspondence analysis provided insights into patterns within Jabiluka Dynamic Figure art and was valuable for examining some of the ritual practice indicators such as formalism and style.

### 5.7. Limitations of methodology

A limitation of this study is that sites and Dynamic Figure art may have been missed in the survey, it is only a sample. Although the survey method was conducted in a systemic manner, it is likely that at least some rock art sites were not recorded (see Section 5.2). As well, Dynamic Figure art is often very faded and in a poor state of preservation. Although, I applied enhancement to reveal faded Dynamic Figure art (see Section 5.3), this relied on recognising Dynamic Figures in the field without these enhancements. Also, certain motifs were recorded without a scale or were poorly photographed because of their location in a rock shelter. To rectify this limitation, I included the 'not possible' category when an attribute could not be determined as present or absent, as discussed in (Section 5.3).

### 5.8. Conclusion

This chapter has outlined the survey and data recording methods for this research and the methods employed to analyse the recorded data. The entire methodology contributes to answering the key research question, what insights does Dynamic Figure art have concerning ritual behaviour, but more specifically the methods examine ritual practice indicators in Dynamic Figure art (see Chapter 4). As well, different aspects of the methodology were developed to answer each subsidiary question. The Mirarr Gunwarddebim survey data, after analysis, is used to examine if Dynamic Figure rock art indicates areas associated with ritual practice within a wider cultural landscape and these results are presented in Chapter 6: Results 1: *Dynamic Places*. The Dynamic

Figure recording method outlined how human figure motifs were recorded and these results are presented in Chapter 7: Results 2: *Dynamic Motifs*. These results are pertinent to examining many of the ritual practice indicators, answering the key research questions, and exploring how the material culture of Dynamic Figure motifs and the motif themselves are associated with ritual practice. Finally, the last results chapter, Chapter 8 Results 3: *Dynamic Scenes*, corresponds with the Dynamic Figure scene recording method and is employed to examine whether Dynamic Figure narrative scenes provide evidence for actual (as opposed to imagined) ritual activities as well as ritual indicators in Dynamic Figure art.

# Section 2 – Results: Dynamic Places, Dynamic Motifs and Dynamic Scenes

# Chapter 6: Dynamic Places

> *In ritual's time or place, words and acts that may be indistinguishable from those of everyday sometime take on special meaning.*
>
> Roy Rappaport (1999:50)

*Figure 6.1. A Dynamic Figure panel at site I20183 and views of the Jabiluka valley (Photograph: M. Abbott).*

## 6.1. Introduction

The results of this study are separate into three chapters — Dynamic Places, Dynamic Motifs and Dynamic Scenes. These results demonstrate the vast level of information contained with the rock art just one study area — Jabiluka. But more significantly, the vast level of information contained within Dynamic Figure art, a depth of information that has allowed for an almost unique investigation of people's lifeways in Arnhem Land's past. Together these chapters provide the baseline information from which I explore my research questions relating to rock art and ritual practice.

This results chapter pertains to the geographic location of Dynamic Figure art sites and is central to exploring evidence for a relationship between ritual places and Dynamic Figure art. From the data I present, I will argue that ritual factors influenced where Dynamic Figure artist painted in their landscape. As Rappaport argued, ritual places help to transform everyday communications into significant ritual messages, a pivotal transformation for making ritual the '*social act basic to humanity*' (Rappaport

1999:31,55). In Jabiluka, I refer to these areas as Dynamic Places and through their investigation demonstrate how they support the hypothesis that Dynamic Figure art is associated with ritual behaviour.

### 6.2. Rock art sites recorded by the Mirarr Gunwarddebim project

Table 6.1 is a count of all the rock art sites recorded by the Mirarr Gunwarddebim project, the table also includes all the sites that were observed to contain Dynamic Figure art and the sites which detailed recording of Dynamic Figure art was undertaken. Within the Jabiluka study area, 528 rock art sites were recorded in and around the Djawumbu-Madjawarrnja massif and the surrounding smaller rock formations. Of these 528 rock art sites, 40 were observed to have instances of Dynamic Figure art production; however, only 37 were able to be recoded using the motif and scene recording forms presented in Chapter 5. The three remaining sites had remnants of human figures, which could be identified as Dynamic Figure art (see Chapter 3), but could not be recorded in a meaningful way. Most Dynamic Figure art sites were recorded around the Djawumbu-Madjawarrnja massif.

**Table 6.1. Overview of recorded sites, Dynamic Figure sites, scenes and motifs in Jabiluka**

| Labels | Count |
|---|---|
| Number of sites recorded in Jabiluka | 528 |
| Instances of Dynamic Figure art production | 40 (8%) |
| Sites where Dynamic Figure human figure motifs could be recorded in detail | 37 (7%) |

Of the 40 rock art sites that contained Dynamic Figure art, 39 of these sites contained Dynamic Figure human figure motifs and one has stencils of material culture that were most likely produced during the Dynamic Figure art period (Site I30033) (see Section 3.11). Chaloupka (1984:29, Site 23) also identified this stencil site as consistent with his Dynamic Figure style. Overall, 8% of sites contained evidence of Dynamic Figure art production. The survey methodology employed ensured that the majority of rock art sites were recorded in the study area and the limited number of missed or overlooked sites would not change this statistic in a meaningful way.

### 6.3. Location of all rock art sites recorded by the Mirarr Gunwarddebim project

Figure 6.2 shows the location of all the rock art sites recorded by the Mirarr Gunwarddebim project within Jabiluka. This map illustrates the density, spread and location of rock art sites within the rock formations of Jabiluka. The clear clustering of sites around the various rock formations is pertinent, alongside the spread of rock art sites across the entire survey area.

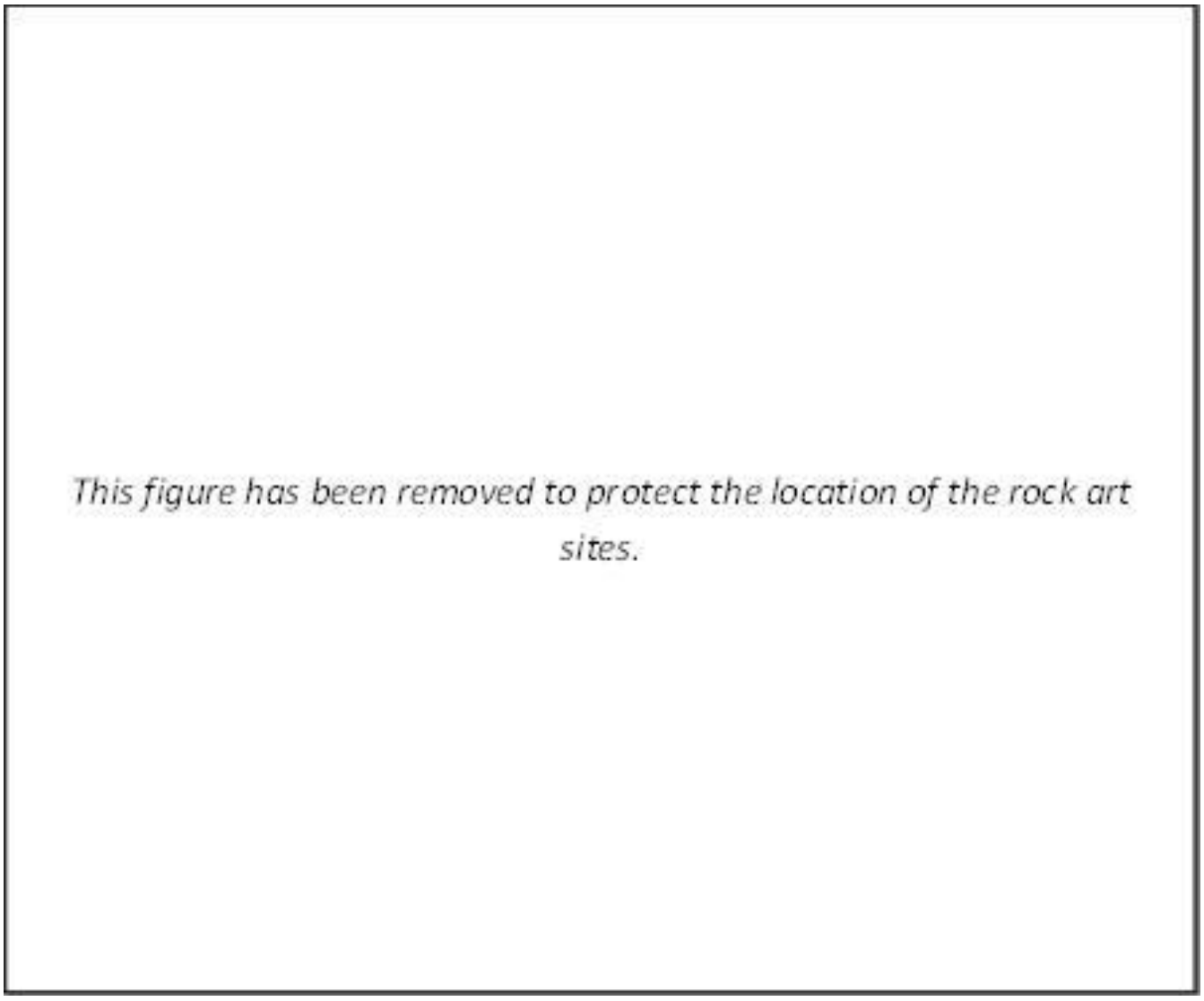



*Figure 6.2. Rock art sites recorded by the Mirarr Gunwarddebim project.*

## 6.4. Location of Dynamic Figure rock art sites recorded by the Mirarr Gunwarddebim project

Figure 6.3 shows the location of Dynamic Figure art sites recorded by the Mirarr Gunwarddebim project. This map illustrates where Dynamic Figure artists preferred to paint in their landscape. The majority, (n=34, 85%), of Dynamic Figure sites are located at the Djawumbu-Madjawarrnja rock formation and many on outer facing rock shelters of this formation. These sites are roughly orientated along the north-south rock formation and valley at the most eastern region of the study area (Figure 6.3). This valley is formed by the eastern side of Djawumbu-Madjawarrnja and the western escarpment formation. This valley between Djawumbu-Madjawarrnja and the escarpment now has a water course running through it and a spring at the northern end, it connects Nomodor Dreaming to Boweg Dreaming (Chaloupka 1978). Chaloupka has recorded one Dynamic Figure site (1984b:25-27, Site 21) on the eastern side of this valley and one 1.8km north of this area at the eastern end of the Jabiluka valley; this site contained depictions of three eel tail cat fish (Chaloupka 1984b:23, Site 19). However, his survey of this area was not substantial (Chaloupka 1978; 1984b). Morley and Lovett (1979; 1980) and the Mirarr Gunwarddebim project team did not survey the far side of the valley as it was outside the Jabiluka Lease Hold boundary, other than one brief trip to relocate an old site known to Kakadu National Park rangers.

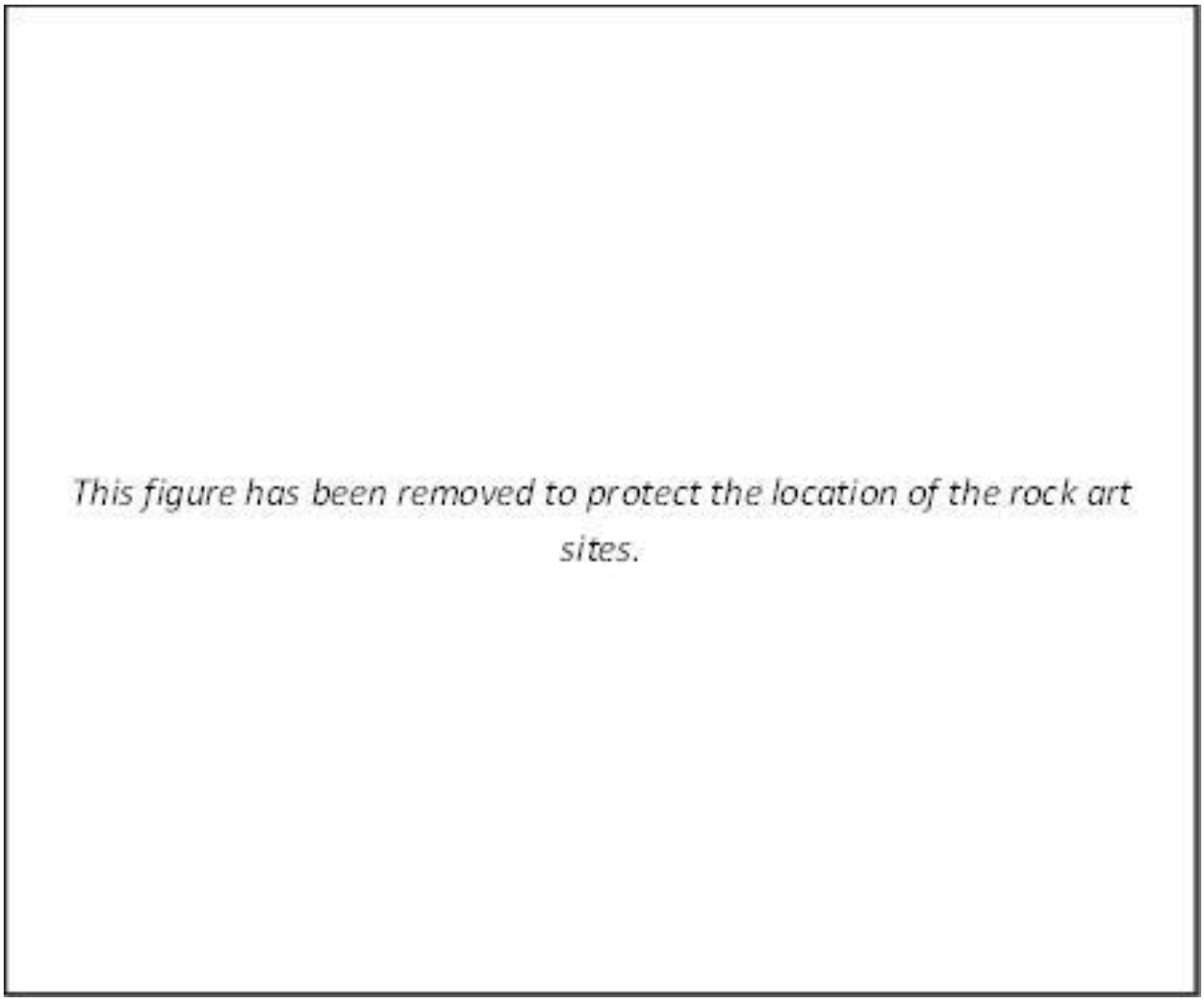



*Figure 6.3. Location of Dynamic Figure sites recorded by the Mirarr Gunwarddebim project.*

### 6.5. Location of Dynamic Figure sites superimposed over all sites recorded by the Mirarr Gunwarddebim project

Figure 6.4 is an overlay of the two previous data sets, Figure 6.2 and Figure 6.3. It illustrates that the Dynamic Figure art sites are often located in clusters of other rock art sites. However, some dense clusters of sites, especially in the northern part of the study area, are absent of Dynamic Figure art. This map, as with Figure 6.3, illustrates where and where not Dynamic Figure painters preferred to paint in the landscape. For instance, the Narradj Warde Djobkeng area (in the northnern part of the study area, has numerous rock art sites, therefore potential art panels, yet few Dynamic Figure sites. Similarly, the western face of the Djawumbu-Madjawarrnja rock formation has numerous sites and panels yet few Dynamics Figure art sites. However, the eastern and southern sides of Djawumbu-Madjawarrnja have many Dynamic Figure art sites. Figure 6.4 demonstrates that artists preferred to produce art in these certain places in the landscape. It does not suggest they did not exploit resources or use other areas, only that art production was linked to specific places. These clusters of Dynamic Figure art sites are referred to as Dynamic Places within this study.

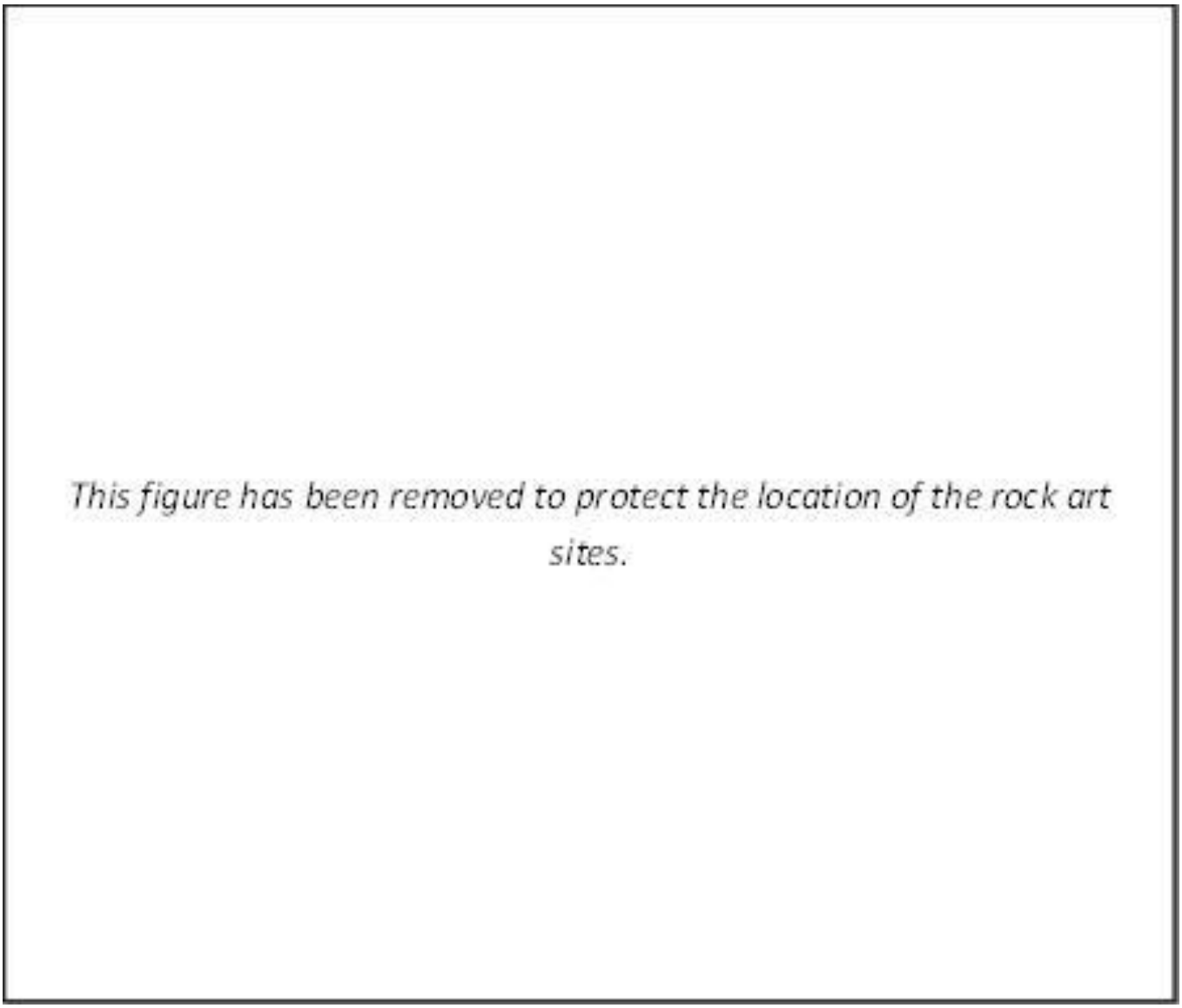



*Figure 6.4. Location of Dynamic Figure sites superimposed over all sites recorded by the Mirarr Gunwarddebim project.*

### 6.6. Taphonomy of Dynamic Figure art

Figure 6.5 is map that shows the location of sites that had Dynamic Figure motifs that were too poorly preserved to record in a meaningful way. This includes the three sites noted in Section 6.2, as well as Dynamic Figure scenes where one or more motifs could not be recorded (n=26) but others were recorded in detail. It illustrates that poorly preserved Dynamic Figure motifs were also located within the clusters of Dynamic Figure sites, noted in Section 6.5 and Figure 6.4. This suggests that these clusters of Dynamic Figure art were not the result of taphonomic processes or the fading of destruction of Dynamic Figure art over time. If this were the case it could be expected that poorly preserved Dynamic Figure motifs would be recorded in similar numbers across the study area instead of only where well preserved Dynamic Figure art was recorded.

However, as red pigment is the least effected by taphonomic processes it cannot be determined if white and yellow Dynamic Figure motifs were painted elsewhere in the landscape or at these clusters. Only one panel of white Dynamic Figure art was recorded in Jabiluka in one of the northern Djawumbu-Madjawarrnja clusters. This anecdotally suggests that white Dynamic Figures were painted at these places also. In summary, taphonomic processes have not overly influenced the geographic distribution of Dynamic Figure art across Jabiluka and created Dynamic Places.

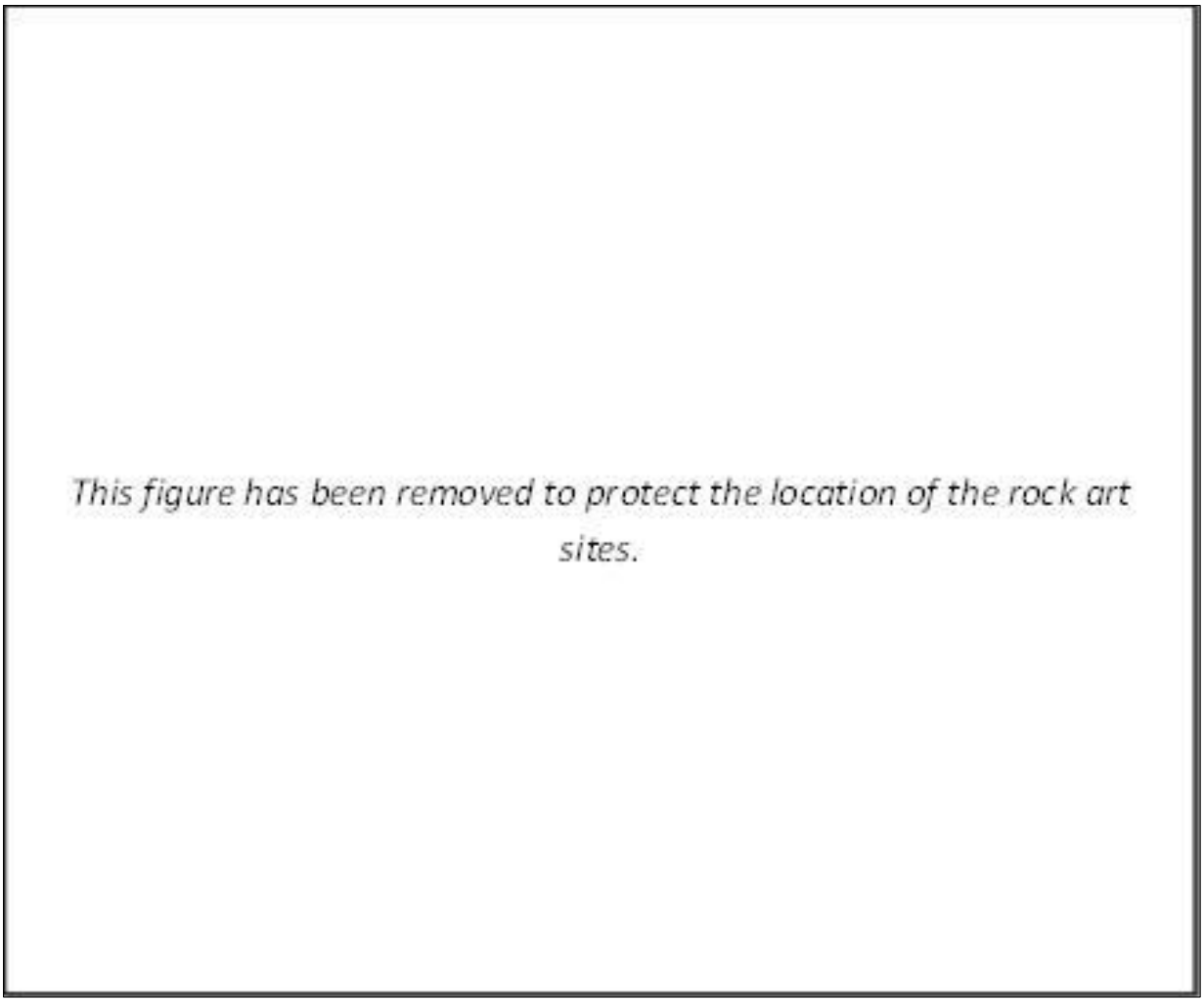



*Figure 6.5. Sites containing poorly preserved Dynamic Figure art recorded as part of Mirarr Gunwarddebim project.*

### 6.7. Overview of Dynamic Figure scenes and motifs in Jabiluka

Dynamic Figure human figure motifs and the scenes they are typically engaged in are the focus of this research, and from the 40 sites that had Dynamic Figure art, 37 had motifs and scenes that were able to be recorded (see Table 6.2). Two sites had Dynamic Figure motifs in too poor a condition to record or analyse and another site, discussed above in Section 6.2, had stencils but no human figure motifs. These 37 sites contained 97 scenes of human figure motifs of between 1 and 13 motifs per scene (Table 6.2). In this section, *97 scenes* and *100 instances of art production* are used depending on the analysis required. 100 instances of Dynamic Figure art projection includes the two sites in too poor a condition to record and the stencil site, each interpreted as one instance of art production for simplicity, although the stencils could represent many more.

**Table 6.2. Overview of recorded Dynamic Figure scenes and motifs in Jabiluka**

| **Labels** | **Count** |
|---|---|
| Dynamic Figure scenes recorded in detail | 97 |
| Dynamic Figure scenes observed but not recorded in detail | 3 |
| **Total instances of Dynamic Figure art production** | **100** |

The 97 recorded Dynamic Figure scenes yielded 246 individual Dynamic Figure motifs, of these, 209 motifs were recorded in detail and 37 were observed but too little of the motif remained to be recorded in a meaningful way (Table 6.3).

**Table 6.3. Overview of recorded Dynamic Figure scenes and motifs in Jabiluka**

| **Labels** | **Count** |
|---|---|
| Number of Dynamic Figure motifs | 209 |
| Number of partial Dynamic Figure motifs | 37 |
| **Total number of Dynamic Figure motifs** | **246** |

Mapping sites as instances of art production better represents the actions of Dynamic Figure artists in the past, as the point symbols in the previous maps did not account for painters returning to sites and painting another scene. All point symbols on the map were the same size regardless of how many scenes or how many Dynamic Figure motifs were painted at that site. During the recording process, it was noted that sites may have more than one scene and a greater or fewer numbers of motifs, suggesting not all sites should be represented equally on the map. The following maps represent this information and interpretation of the Dynamic Figure art site data.

### 6.8. Repeated instances of Dynamic Figure art production

Table 6.4 is a count of instances of Dynamic Figure art production per site. This data shows that half (n=21, 52%) of the sites recorded had more than one scene or instance of art production. This table indicates that Dynamic Figure artists not only returned to specific places in the landscape to paint but return to specific sites, as defined by the Mirarr Gunwarddebim project. See Chapters 9 and Chapter 10 for further explanation of the significance of repeated site use and the definition of a site.

**Table 6.4. Instances of Dynamic Figure art production recorded at each site**

| Dynamic Figure scenes per site | Count |
|---|---|
| 1 | 19 (48%) |
| 2 | 11 (28%) |
| 3 | 3 (8%) |
| 4 | 2 (5%) |
| 6 | 2 (5%) |
| 8 | 1 (3%) |
| 9 | 1 (3%) |
| 13 | 1 (3%) |
| **Total** | **40** |

### 6.9. Density of instances of Dynamic Figure art production (scenes) in Jabiluka

Figure 6.6 illustrates the instances of Dynamic Figure art production in Jabiluka. In this map, the locations of sites are marked by factored points, where a greater number of scenes equate to a larger point on the map. This demonstrates that considerably more instances of art production were recorded in the eastern Djawumbu-Madjawarrnja rock formation valley, represented by more and larger points. There is also a large cluster of points at the southern end of the massif. These two areas constitute 89% (n=89) of all instances of Dynamic Figure art production and 78% (n=31) of the Dynamic Figure sites in Jabiluka. The map indicates that artists were choosing to paint at these Dynamic Places much more frequently than other places in survey area (see also Figure 6.2).

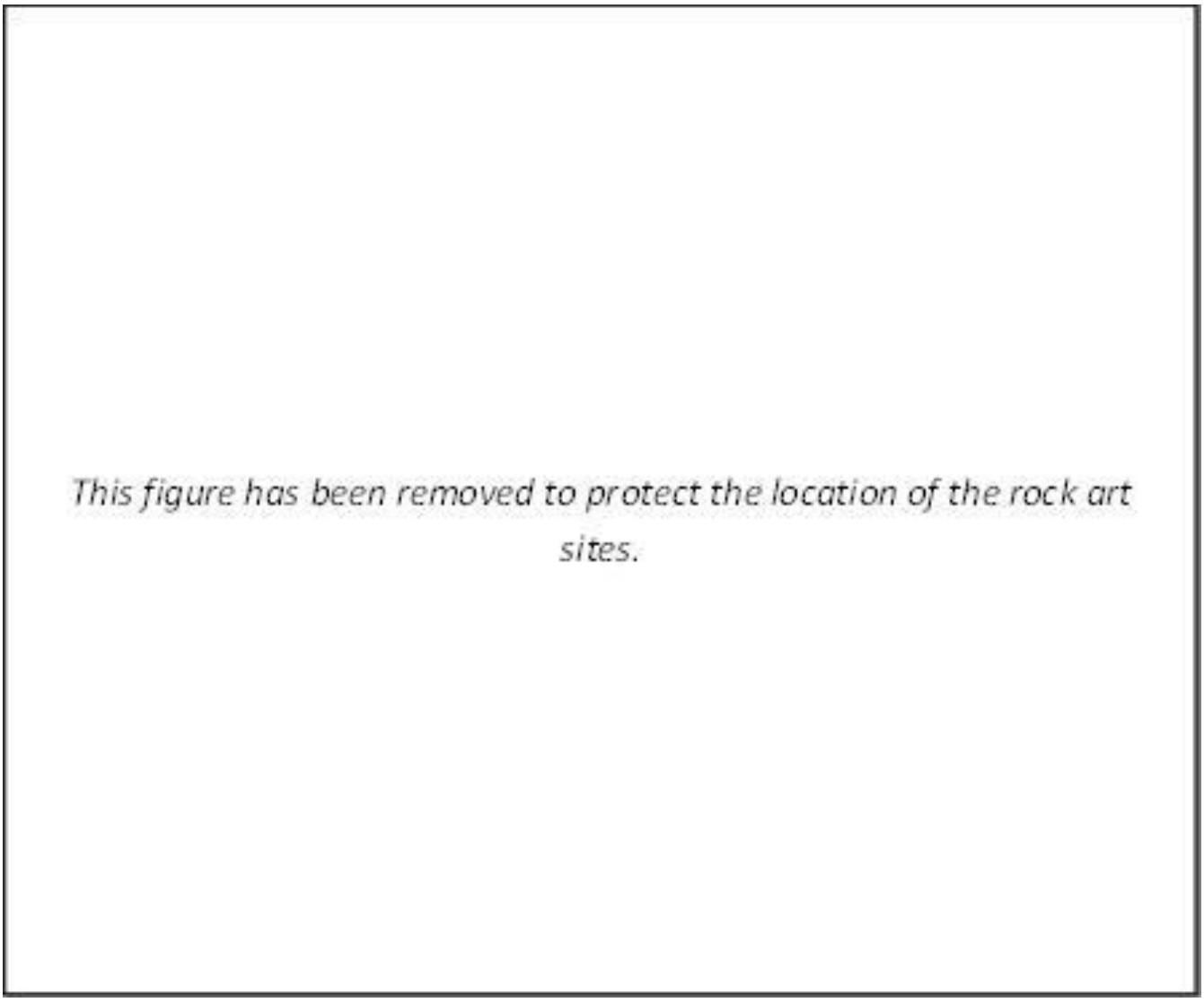



*Figure 6.6. Location of Dynamic Figure sites where points are factored by instances of art production (scenes) per site.*

### 6.10. Density of time of spent painting Dynamic Figure art (motifs) in Jabiluka

Figure 6.7 illustrates the time spent painting at Dynamic Figure sites in Jabiluka. In this map, the locations of sites are marked by factored points, where a greater number of motifs equate to a larger point on the map. For simplicity, it was assumed that all motifs took the same length of time to paint so the number of motifs per scene equates to the time spent painting, i.e. a scene of two motifs took twice as long as a scene with one motif (see Sections 5.4-5.5). This map accounts for sites where a single scene of many motifs could have been recorded but would be represented as small point in Figure 6.6. Figure 6.7 largely demonstrates the same information as Figure 6.6, that artists spent considerably more time painting (90% of time, n=222 units of time) at the Dynamic Places in the landscape, despite suitable rock shelters present in the non-painted places (see also Figure 6.2).

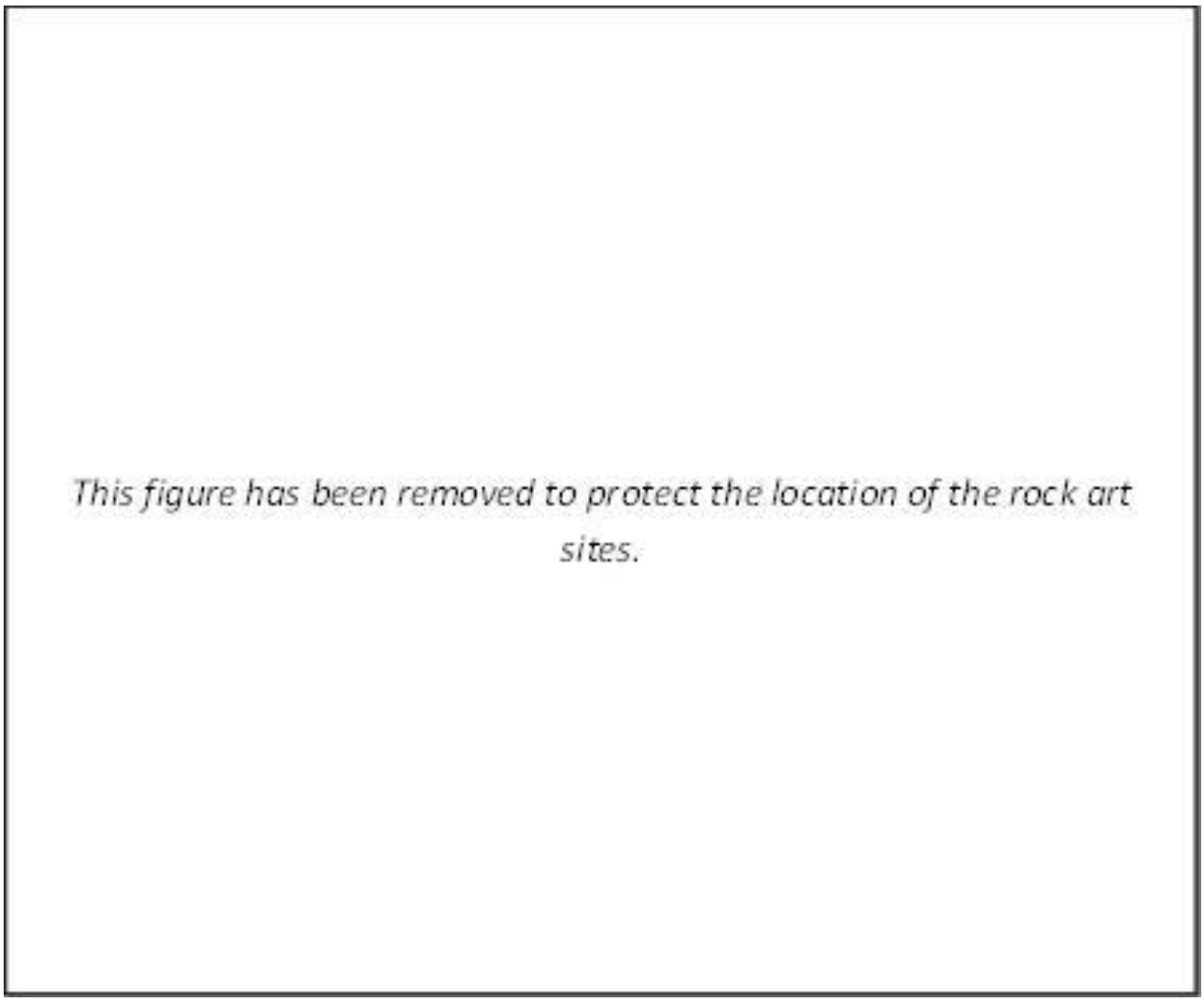



*Figure 6.7. Location of Dynamic Figure sites where points are factored by time spent painting (motifs) per site.*

### 6.11. Size of Dynamic Figure art sites

Rock art sites were classified into three sizes, small (1-5m), medium (5-20m) and large (20m+) by the survey team. The size of a site was determined by measuring the length of available painting surface within a shelter or on a rock wall. Dynamic Figure art was recorded in approximately even proportions between small (n=15, 37.5%), medium (n=14, 35%) and large (n=11, 27.5%) sites (see Table 6.4). This suggests that the size of a site does not explicitly prohibit a painter from choosing it for Dynamic Figure art production.

**Table 6.5. Dynamic Figure sites recorded grouped by site size**

| **Labels** | **Count of Sites** |
|---|---|
| Large (20m+) | 11 (27.5%) |
| Medium (5-20m) | 14 (35%) |
| Small (1-5m) | 15 (37.5%) |
| **Total** | **40** |

#### 6.11.1 Location of different sized Dynamic Figure art site

Figure 6.8 illustrates the location of Dynamic Figure sites labelled by the site's size classification. Larger Dynamic Figure sites were recorded in the eastern and southern Djawumbu-Madjawarrnja rock formation valley interspersed with medium and smaller ones. Outside this area, with one exception, the Dynamic Figure art sites recorded were medium (n=5) and small (n=3) sites. The clusters of dense Dynamic Figure scenes and motifs, Figure 6.6 and Figure 6.7, are at the concentration of larger sites in this map.

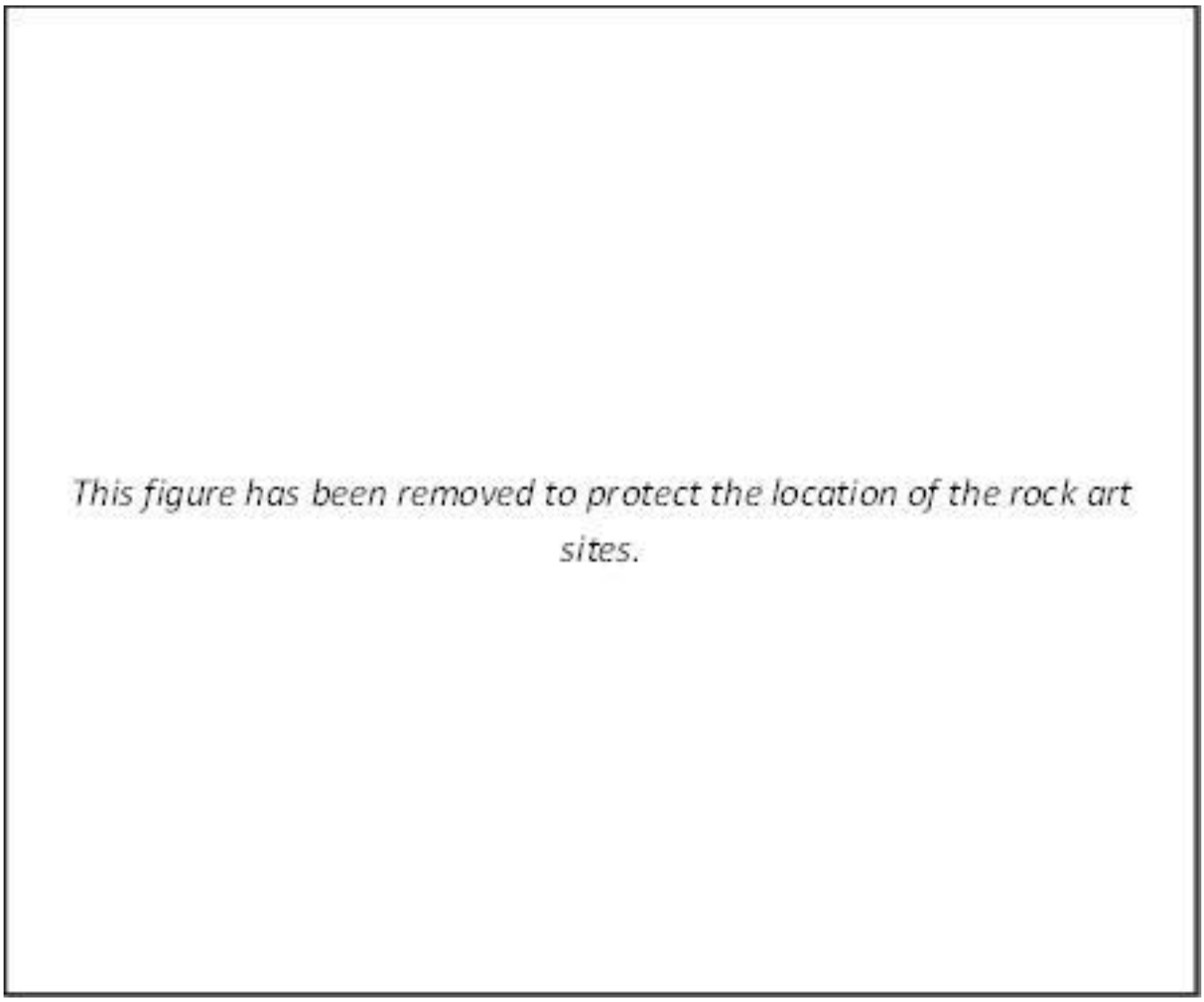



*Figure 6.8. Location of Dynamic Figure sites labelled by size.*

### 6.11.2 Dynamic Figure art production related to site size

Table 6.5 shows the count of Dynamic Figure scenes and motifs recorded at each site size classification. This table is a representation of instances of art production and time spent painting corresponding to the size of a site. Large sites (n=57, 57%) were more likely to contain a greater number of scenes than medium (n=19, 19%) or smaller ones (n=24, 24%). Similarly, large sites (n=154, 62%) contained the majority of individual Dynamic Figure motifs compared to medium (n=39, 16%) or smaller sites (n=55, 22%). It could follow that as large sites were more likely to have available space for painting; artists more often chose these sites for art production. This is quite a simple interpretation although it is not inconceivable. However, comparing Dynamic Figure art production by size to all rock art sites in Jabiluka suggests an alternative explanation.

**Table 6.6. Dynamic Figure scenes and motifs recorded and grouped by site size**

| Labels | Count of scenes | Count of motifs |
|---|---|---|
| Large (20m+) | 57 (57%) | 154 (62%) |
| Medium (5-20m) | 19 (19%) | 39 (16%) |
| Small (1-5m) | 24 (24%) | 55 (22%) |
| **Total** | **100** | **248** |

Table 6.7 shows a count of all the rock art sites in Jabiluka with recorded site size information (during the survey recording process 14 sites had their site size measurement overlooked and not entered into the recording form, thus 514). This data is displayed in Figure 6.9, which shows all the rock art sites across Jabiluka labelled by size. This map shows that each site size type was recorded across the landscape; therefore, Dynamic Figure artists could have painted at their preferred site size anywhere in Jabiluka. However, this was not the case (see Figure 6.8). Table 6.7 shows that more than half of all rock sites recorded were small (n=299, 58%) and the next most recorded were medium size (n=135, 26%) sites. Large sites only made up 16% (n=80) of the total recorded sites. Comparing Table 6.7 with Table 6.5 suggests that artists preferred to paint at larger sites during the Dynamic Figure art period compared to the subsequent periods of art production. While, Table 6.6 shows that during the Dynamic Figure art period, large sites were chosen on similar frequency to smaller sites, large sites contained substantially more rock art. This contrasts with the overall artistic production in Jabiluka which preferred small and medium sites (Table 6.7).

**Table 6.7. Site recorded by the Mirarr Gunwarddebim project grouped by site size**

| Labels | Count of Sites |
|---|---|
| Large (20m+) | 80 (16%) |
| Medium (5-20m) | 135 (26%) |
| Small (1-5m) | 299 (58%) |
| **Total** | **514** |

In summary, larger sites were preferred by Dynamic Figure artists provided they were located within specific places in the landscape (Figure 6.9). Within these specific places, a site's suitability may have been influenced by its material resources and its habitableness for a band of people, both more likely at larger sites. This is considered in the follow Section 6.12. However, this observation does not consider how the preservation of rock art may have influenced this conclusions or if a specific art period accounts for the numerous small sites, i.e. at one period artists often painted at small sites while large sites were generally preferred throughout most other periods of rock art production in Arnhem Land.

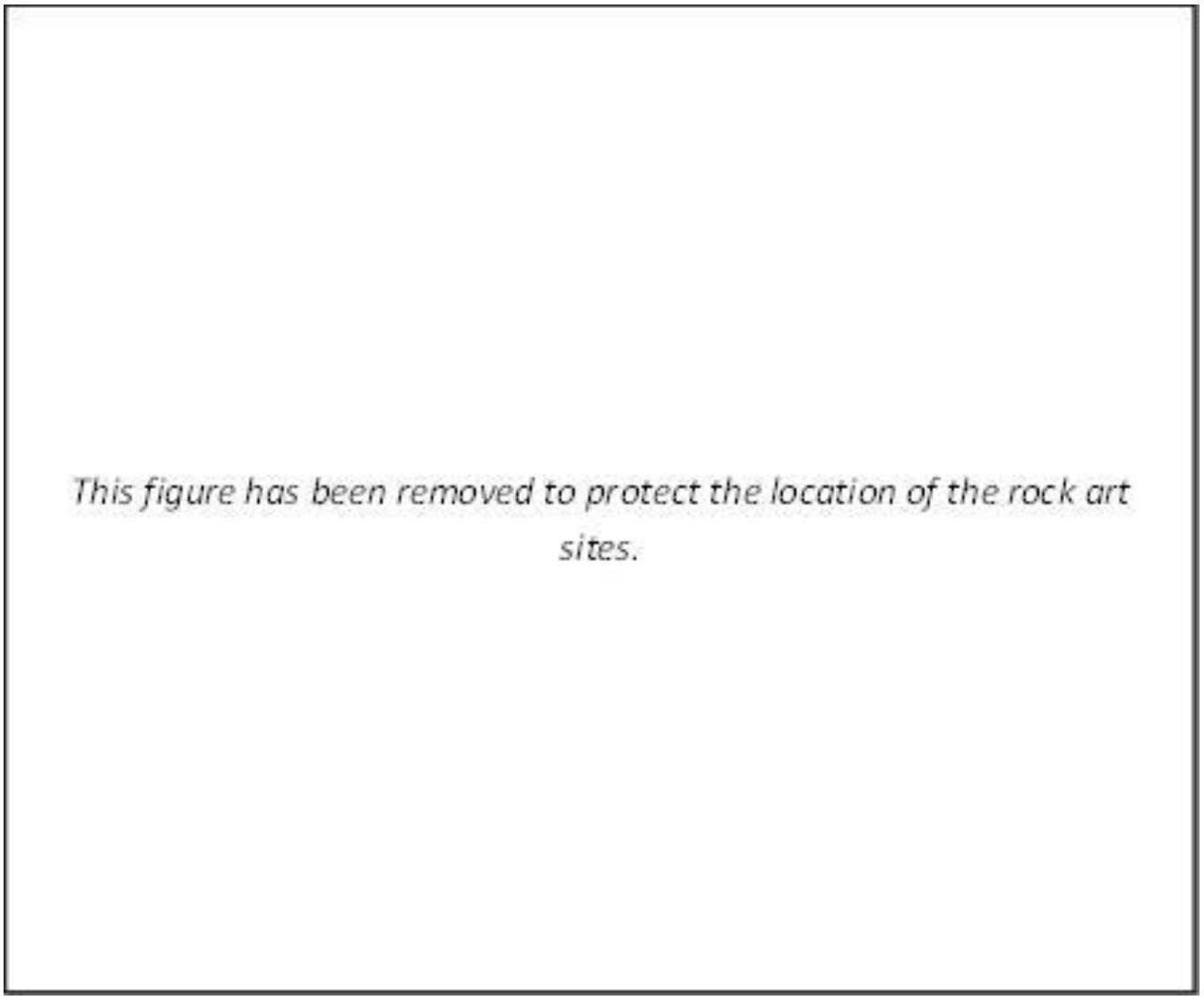



*Figure 6.9. Location of all sites recorded by the Mirarr Gunwarddebim project labelled by size.*

### 6.12. Types of Dynamic Figure art sites

Dynamic Figure art was recorded at five different rock art site types; Table 6.8 is a count and definition of these types. Rock shelters were the most recorded Dynamic Figure site type (n=24, 60%) and substantially fewer cave (n=2, 5%), exposed boulder (n=4, 10%), exposed panel (n=6, 15%) and quarry (n=4, 10%) sites were recorded. Rock shelters had the highest count of Dynamic Figure scenes, (n=50, 50%), and individual motifs, (n=109, 40%). Exposed panel, exposed boulder and cave sites all had substantially fewer scenes and motifs than rock shelters or quarry sites (Table 6.8).

**Table 6.8. Dynamic Figure sites grouped by site type with scene and motif information included**

| **Labels** | **Definition** | **Count of sites** | **Count of scenes** | **Count of motifs** |
|---|---|---|---|---|
| Cave | A shelter with a significant passage that enters into the rock formation. | 2 (5%) | 3 (3%) | 9 (4%) |
| Exposed boulder | An isolated rock formation that is no longer connected to the bedrock and has travelled a distance of ≥25m from a larger geological feature. | 4 (10%) | 6 (6%) | 13 (5%) |
| Exposed panel | An area of a large geological feature (e.g. escarpment wall) that does not form a shelter and is separated from rock shelters by a distance of ≥25m. | 6 (15%) | 11 (11%) | 32 (13%) |
| Rock shelter | A rock formation large enough for people (≥2) to occupy and provide them with cover. | 24 (60%) | 50 (50%) | 109 (44%) |
| Rock shelter - quarry | A rock shelter with **substantial** quarrying of raw materials that could be used to create stone implements. | 4 (10%) | 30 (30%) | 85 (34%) |
| **Total** | | **40** | **100** | **248** |

As with site size, no site type prohibited Dynamic Figure art production. Also, as rock shelters were the most recorded site type for the entire survey area (see Table 6.9), it is not surprising they were the most recorded Dynamic Figure site type. The preference of rock shelters compared to other site types is most likely a result of rock shelters being the most common sites that accommodate art production in the Jabiluka. However, rock shelter quarry sites had proportionally more Dynamic Figure scenes and motifs than the other site types, see Section 6.12.2.

**Table 6.9. Sites recorded by the Mirarr Gunwarddebim project categorised by site type**

| **Labels** | **Count of sites** |
|---|---|
| Cave | 12 (3%) |
| Cave - rock shelter | 3 (1%) |
| Exposed boulder | 99 (21%) |
| Exposed panel | 141 (29%) |
| Exposed panel - quarry | 2 (>1%) |
| Open site | 2 (>1%) |
| Open site - stone arrangement | 4 (1%) |
| Other | 3 (1%) |
| Rock shelter | 200 (42%) |
| Rock shelter - quarry | 14 (3%) |
| **Total** | **480** |

In the survey phase only 480 sites had site type information recorded into the recording form.

### 6.12.1 Dynamic Figure art quarry sites

Rock shelter quarry sites had proportionally higher instances of Dynamic Figure art production and exhibited more time spent painting Dynamic Figure motifs than other site types. Quarry sites were defined as sites that had significant evidence of raw material (often quartzite) mining, knapping and gathering. Sites where the edges or corners of rock surfaces had been knapped were not defined as quarries, but considered opportunistic material gathering. 16 quarry sites were recorded in the Jabiluka survey area and 4 (25%) contained Dynamic Figure art. These four quarry sites contained 30 (30%) of Dynamic Figure scenes and 85 (34%) of the Dynamic Figure motifs (Table 6.8). Table 6.10 is an overview of these sites and shows that three were recorded as large (20m+) in size and the fourth medium (5-20m), although the site notes describe it as 'A long site on the edge of the western edge of the escarpment with an overhang on most of the length' (Hayward notes from site I30143 23/07/2013).

**Table 6.10. Dynamic Figure rock shelter quarry sites with site, scene and motif breakdown**

| Labels | Size of site | Count of scenes | Count of motifs |
|---|---|---|---|
| I1 0034 N13 15/07/2013 | Large (20m+) | 6 (20%) | 16 (19%) |
| I1 0113 Q13 22/06/2014 | Large (20m+) | 9 (30%) | 25 929%) |
| I3 0030 N13 16/06/2012 | Large (20m+) | 13 (43%) | 41 (48%) |
| I3 0143 R12 23/07/2013 | Medium (5-20m) | 2 (7%) | 3 (4%) |
| **Total** | | **30** | **85** |

Figure 6.10 shows the location of all the Dynamic Figure art sites labelled by site type. The rock shelter quarry sites are labelled as an orange point and are located in the clusters of Dynamic Figure sites. It is possible that the raw material resource influenced artists to paint at these places but did not specifically make them Dynamic Places (see Chapter 10).

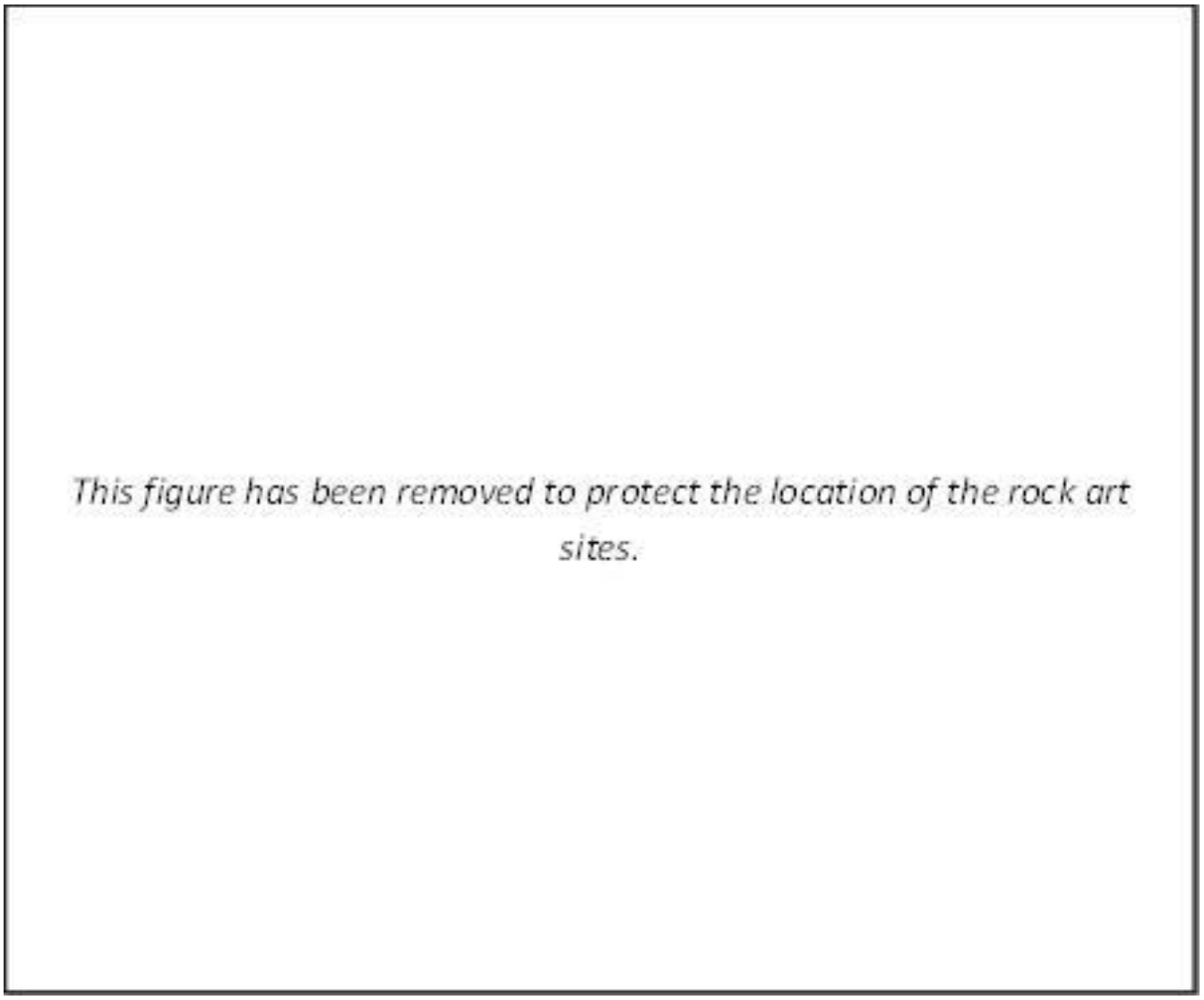



*Figure 6.10. Location of Dynamic Figure art sites labelled by site type.*

Figure 6.11 shows the location of all recorded quarry sites in the Jabiluka survey area with red points representing sites containing Dynamics Figure art. This map demonstrates that only specific quarries had evidence of Dynamic Figure art production, highlighting that specific quarries were chosen while others were not. The places within the Jabiluka landscape preferred for Dynamic Figure art production did not necessarily contain quarrying resources; but the number of scenes and motifs at these quarry sites suggests that these were significant spaces within these Dynamic Places.

It cannot be ascertained the extent to which these quarry sites were exploited during the Dynamic Figure period. Also, the assumption implicit in the discussion above is that all quarry sites had the same possibility of exploitation in the past as they do in the present and have not been create by recent rock fall.

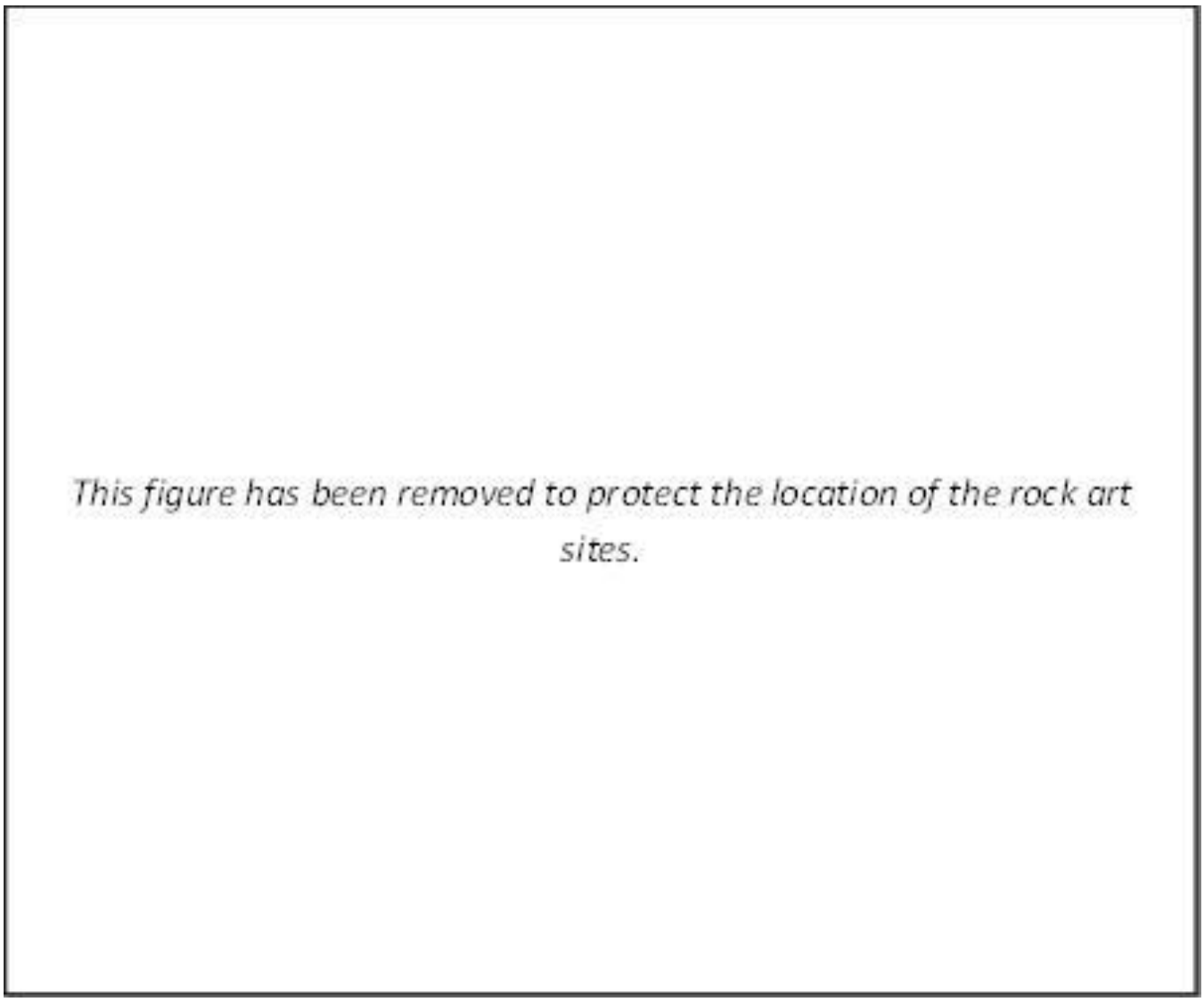



*Figure 6.11. Quarry sites recoded in Jabiluka.*

### 6.13. Orientation of Dynamic Figure art sites

The orientation of each site was recorded and Table 6.11 shows that no specific orientation was preferred. This data was rationalised into four orientation directions, to consider broader orientation preferences (Table 6.12). This interpreted data suggests a preference for north facing sites. This is could be a coincidence of the geological formation of Djawumbu-Madjawarrnja massif and where the Dynamic Places are located in the formation. Alternatively, sites were chosen to face towards or away from a particular area, although not enough evidence exists to adequately discuss this. The evidence presented here is not conclusive, but orientation does not seem to be a significant influence on site selection for Dynamic Figure art production.

**Table 6.11. Dynamic Figure sites grouped by orientation**

| **Labels** | **Count** |
|---|---|
| East | 5 |
| North | 9 |
| North East | 6 |
| North West | 3 |
| South | 1 |
| South East | 2 |
| South West | 2 |
| West | 6 |
| No data | 6 |
| **Total** | **40** |

**Table 6.12. Dynamic Figure sites rationalised and grouped by orientation**

| **Labels** | **Count** |
|---|---|
| North (N,NE,NW) | 18 |
| South (S,SE,SW) | 5 |
| East (E) | 5 |
| West (W) | 6 |
| No data | 6 |
| **Total** | **40** |

### 6.14. Dynamic Places in Arnhem Land

Figure 6.12 shows all the Dynamic Figure art sites recorded by Chaloupka for his Dynamic Figure report (Chaloupka 1984b). Similar to the more focused and systematic Jabiluka survey, Figure 6.12 shows Dynamic Figure sites were recorded in clusters. The densest clusters are at Deaf Adder Creek and Djidbidjidbi (Chaloupka 1984b). The clusters, at this scale, represent groups of Dynamic Places, opposed to specific Dynamic Places as in Figure 6.3. This map illustrates that in Arnhem Land, as in Jabiluka, Dynamic Figure art production was at specific places in the landscape.

Currently no other rock art survey in Arnhem Land that I have had access to, can provided similar systemically recorded data like that of the Mirarr Gunwarddebim project. To rectify this as much as possible, I have engaged in discussion and examination of legacy data. This investigation has supported my contention concerning Dynamic Places, as certain areas in Kakadu and western Arnhem Land with numerous instances of rock art production and dense clusters of rock art sites have few Dynamic Figure motifs. Lewis (pers. comm. 2014,2016) has surveyed many areas with few Dynamic Figure motifs. At Ubirr he recorded only one scene, only one at Cannon Hill and few in the 3–4km in both directions from Cahill's Crossing of the East Alligator River; these areas have numerous art sites yet few Dynamic Figure motifs. Chaloupka's Dynamic Figure report (1984b) is similar, with numerous sites at Deaf Adder Creek and Djidbidjidbi but few sites around the East Alligator River. Similarly, Jones (pers. comm. 2016) recorded very few Dynamic Figure sites in the Red Lily area, which has huge densities of other rock art types; especially Northern Running Figures (see Jones and May 2017).

The Mirarr Gunwarddebim survey of Djidbidjidbi found greater densities of Dynamic Figure art sites at its southern end and through the central valley but fewer Dynamic Figure art sites in the north, yet numerous rock art sites. Although not conclusive because the survey is unfinished, it also suggests that Dynamic Figure art sites were clustered together at specific places in the landscape of Djidbidjidbi.

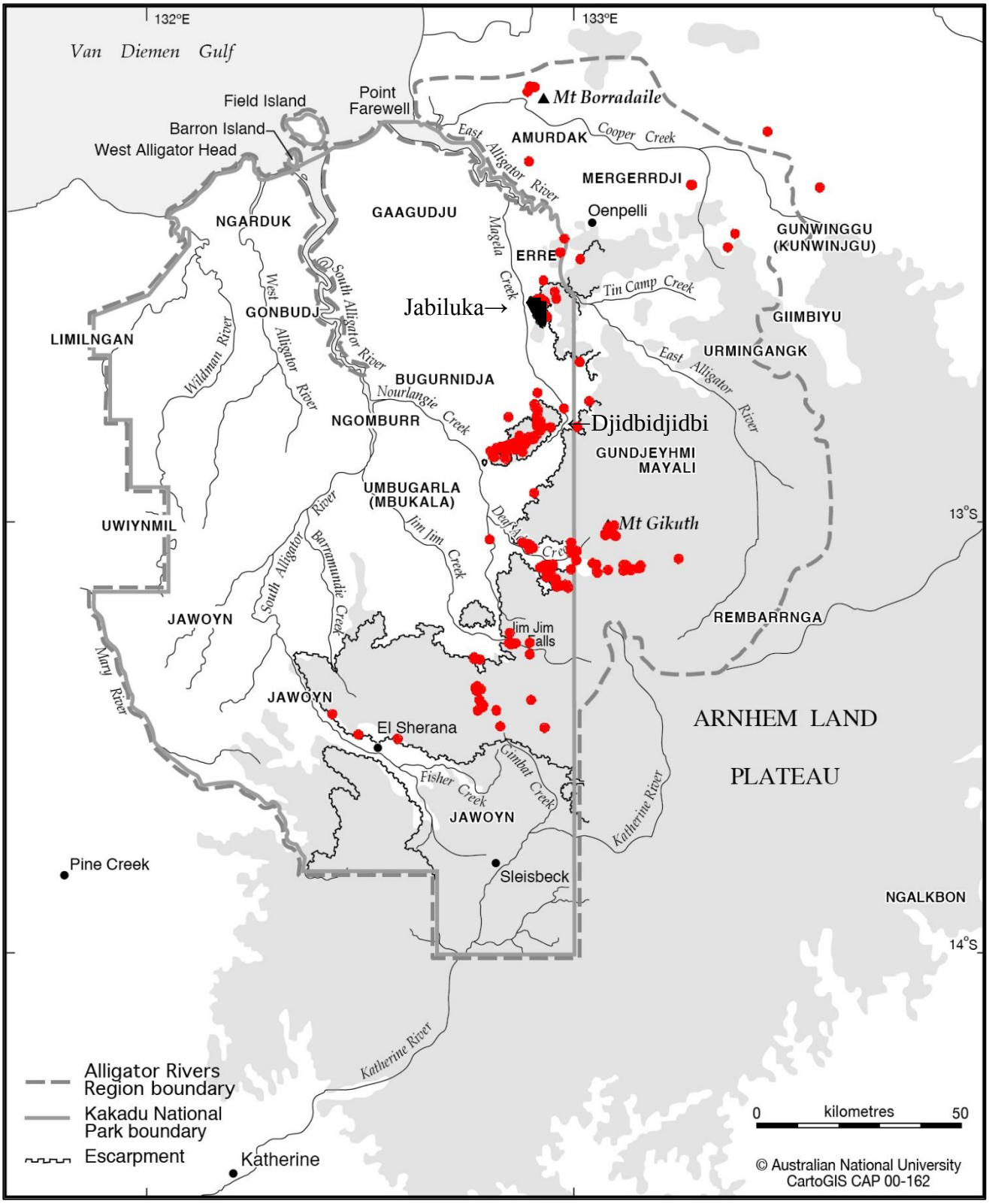



*Figure 6.12. Approximate location of Dynamic Figure sites recorded by Chaloupka (1984b) (Source: CARTOGIS).*

### 6.14.1 Mapping Dynamic Places in Arnhem Land

Figure 6.13 illustrates the time spent painting at Dynamic Figure art sites in Arnhem Land using Chaloupka (1984b), and following a similar method to the map in Figure 6.7. In this map, the locations of sites are marked by factored points, where a greater number of motifs equates to a larger point on the map. Chaloupka's report included a count of how many Dynamic Figure human figures, stencils and animals were present at each site he recorded (Chaloupka 1984b) and I used this data to scale the size of the map points. A noticeable difference between Figure 6.7 and Figure 6.13 is that at this scale, to include a greater part of the western Arnhem Land plateau, sites with few Dynamic Figure motifs are covered by sites with many Dynamic Figure motifs. The proportional scaling of site points also means that some small sites are invisible.

Dynamic Figure fauna were excluded from the motif count as they are hard to positively identify from other art types (see Section 3.10). Also, Post-Dynamic Figures were excluded, although are noted as such in the report. It is important to acknowledge that Chaloupka's survey method was not as rigours or as systematic as the Mirarr Gunwarddebim project's. However, this map, like Figure 6.7, illustrates that Dynamic Figure artists spent more time painting at certain Dynamic Places in Arnhem Land.

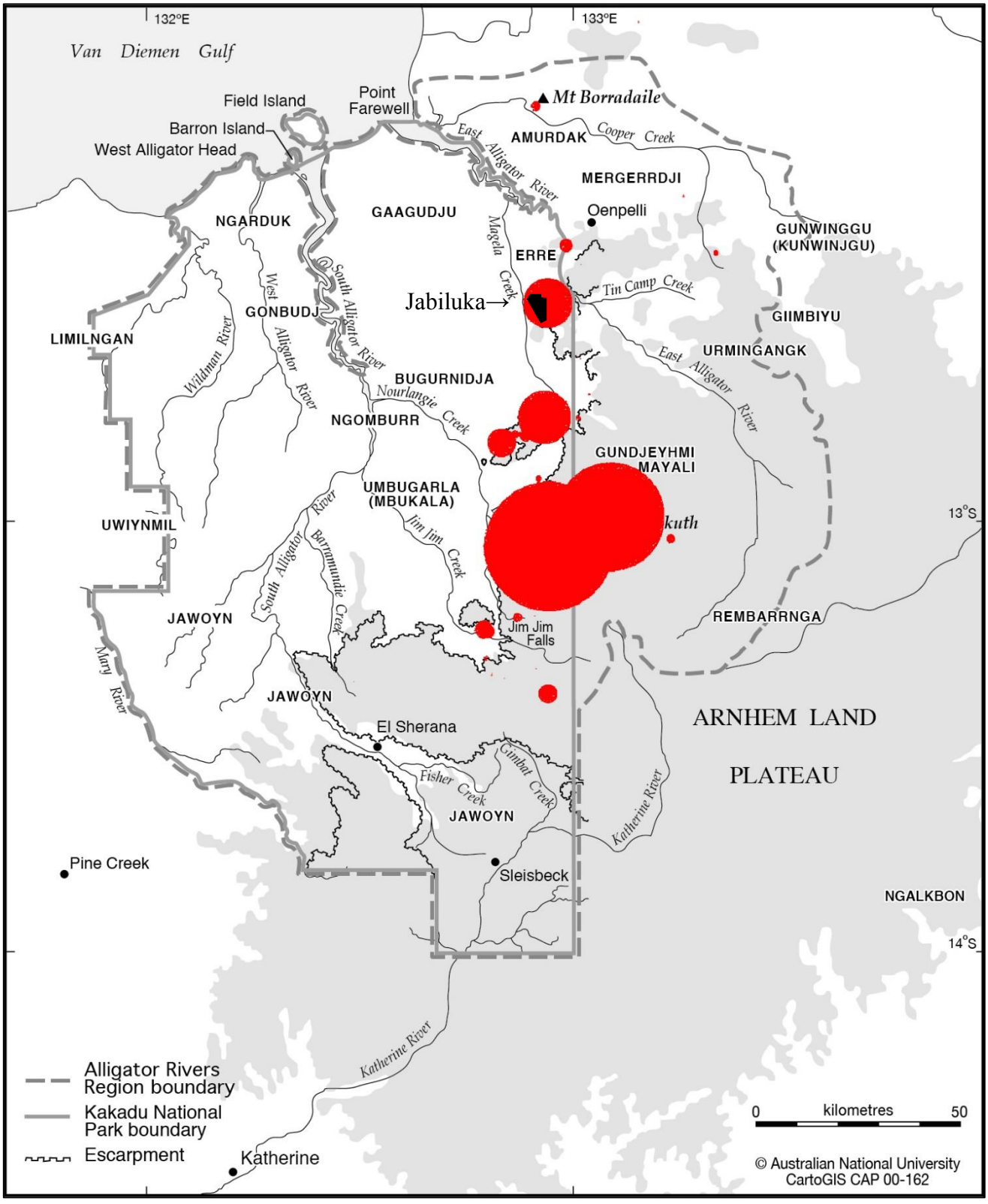



*Figure 6.13. Location of Dynamic Figure sites in Arnhem Land; comprising of Chaloupka (1984b) and sites recorded by the Mirarr Gunwarddebim project, with factored points by number of motifs per site.*

### 6.15. Conclusion

This chapter has presented evidence that Dynamic Figure artists chose specific places in the landscape to paint and that they and future artists chose to return to these places to paint again. These places were at the eastern and southern areas of the Djawumbu-Madjawarrnja massif. This evidence is used to explore the secondary research question; what evidence is there for ritual places in Dynamic Figure art? In short, this chapter illustrates that Dynamic Figure art production took place at specific locations within the Jabiluka landscape. I have shown that these locations were not the result of an absence of suitable painting locations, as numerous art sites were recorded across Jabiluka. Also, Dynamic Figure artists spent more time at these special places and revisited the sites more often than other areas. These places grew over time and artists would have been conscious of this additive process, knowing that others who painted similar forms to themselves had been there in the past and would come in the future. I also demonstrated that these locations were associated with large rock shelters, which might not be unique to Dynamic Figure art, but is in contrast with the greater Jabiluka rock art assemblage that contained more small and medium sized art sites. These locations also appear to have an association with the quarrying of raw materials, as quarry sites contained proportionally more Dynamic Figure art production than other site types. Finally, I expanded my study of Dynamic Places to the Arnhem Land plateau and demonstrated, using Chaloupka (1984b), that Dynamic Places existed outside Jabiluka. Dynamic Figure artists across Arnhem Land were choosing to paint at specific places and would have most likely known that their artworks would form part of a Dynamic Place; their art was likely influenced by these places and would likely influence future artists. The next chapter focuses upon the specific Dynamic Figure motifs painted at these Dynamic Places.

# Chapter 7: Dynamic Motifs

> *[Dynamic Figures] …are masterpieces of innovative concepts and of outstanding aesthetic quality, embodying the artists' existential experiences and describing the world around them and their relationships with others.*
>
> George Chaloupka (1993a:106)

*Figure 7.1. Traced reproduction of Dynamic Figure motifs with background from site I10125 at Djidbidjidbi.*

## 7.1. Introduction

This results chapter contains data pertaining to the Dynamic Figure motifs of Jabiluka and their accompanying material culture. I use the analysis of these motifs to answer the primary research question and investigate many of the ritual indicators, exploring whether Dynamic Figure art is indicative of ritual practice and what insights into past ritual behaviour it can provide. More specifically, I seek to answer one of the secondary research questions: are there ritual indicators associated with individual Dynamic Figure motifs. To do this, I examine a further set of questions, some developed from Chapters 3 and 4:

- How stylistically homogeneous are the Dynamic Figure motifs of Jabiluka?
- What evidence is there for ritual practice in the material culture of Dynamic Figure art?
- Was Dynamic Figure art an effective and efficient medium to signal ritual behaviour and information?

The literature review demonstrated that previous studies of Dynamic Figure art have concluded much about the period from its apparent stylistic homogeneity. However, the homogeneity of Dynamic Figure art has not been adequately demonstrated. The first section of this chapter will demonstrate that although there is broad homogeneity across the assemblage, two distinct types of Dynamic Figures were recorded in Jabiluka.

I also discuss the various material culture objects of Dynamic Figure art and demonstrate the prominence of worn material culture, as opposed to carried material culture, which is strongly associated with ritual practice (Johnston 2017). The use of material culture in this way also contributed to the efficiency and effectiveness of Dynamic Figure art to communicate ritual behaviour, this contention is expanded in the discussion Chapters 9 and 10.

The forms and poses of Dynamic Figure motifs are also reported. The significance of these forms and poses are explored in the discussion Chapters 9 and 10 as indicators of invariance within ritual messages and how, as part of an iconographic system, these forms and poses contributed to their efficiency and effectiveness of Dynamic Figure art to communicate ritual information.

### 7.2. Overview of Dynamic Figure motif attributes

This section consists of results relating to the different forms of Dynamic Figure motifs within Jabiluka. It contains counts, lists and examples of the different infill, musculature forms and whether the sex of a motif is depicted. These attributes are then combined and analysed using correspondence analysis (CA) to see how often certain attributes occurred together. This analysis will show that despite broad homogeneity in the assemblage at least two distinct types of Dynamic Figure motifs were recorded in Jabiluka.

### 7.2.1 Dynamic Figure motifs recorded in Jabiluka

Table 7.1 is a count of all the recorded Dynamic Figure motifs in Jabiluka pertinent to this results chapter.

**Table 7.1. Dynamic Figures motifs in Jabiluka**

| **Labels** | **Count** |
|---|---|
| Number of Dynamic Figure motifs | 209 |
| Number of partial Dynamic Figure motifs | 37 |
| **Total number of Dynamic Figures** | **246** |

### 7.2.2 Sex of Dynamic Figures recorded at Jabiluka

Table 7.2 is a count of the Dynamic Figure motifs categorised by whether they had male, female or no sexual organs depicted. In the Jabiluka survey, no motifs had male sexual organs depicted and 85% (n=178) had no sexual organs depicted. The count of 178 included the 14 therianthrope motifs which are occasionally depicted with a penis in Dynamic Figure art (Brandl 1988:173; Taçon and Chippindale 2001a). 11% (n=23) of motifs were depicted as female with breasts and possibly a vulva or defined pubic bump shown (Figure 7.2).

**Table 7.2. Sex of Dynamic Figure motifs in Jabiluka**

| **Labels** | **Count** |
|---|---|
| No sexual organs depicted | 178 (85%) |
| Defined as female (breasts depicted) | 23 (11%) |
| Not possible | 8 (4%) |
| Male sexual organs depicted | 0 (0%) |
| **Total** | **209** |

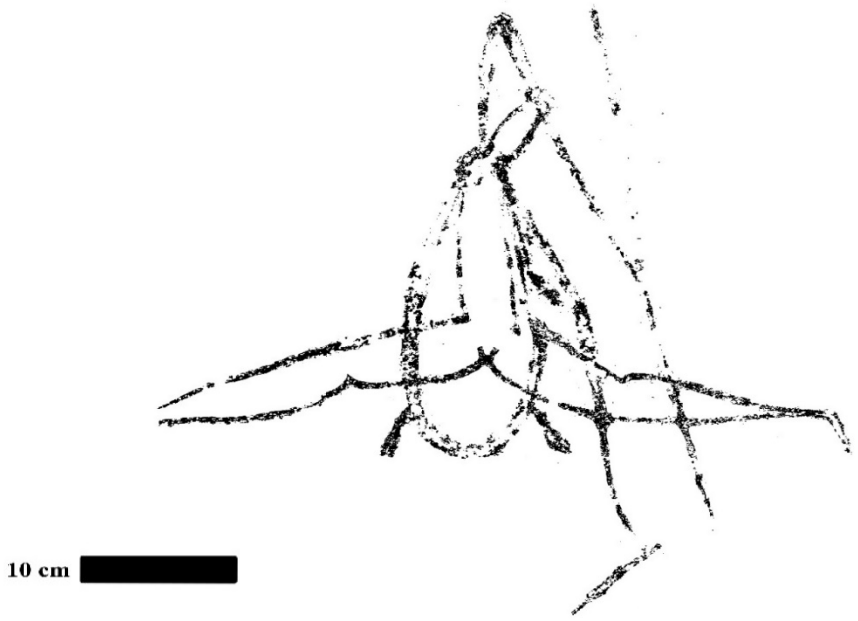



*Figure 7.2. Traced reproduction of motif I10046:13:1 showing breasts and defined vulva or pubic region.*

### 7.2.3 Presence of Dynamic Figure motif heads

Table 7.3 is count of whether the head of a Dynamic Figure motif was depicted. In some instances, the distinction between the head and headdress was not possible; however, more often, 79% (n=165) of motifs, the head was depicted. The preference to most often depict the head demonstrates that Dynamic Figures were depicted wearing headdresses and do not have deformed or composite heads (see Figure 7.3). This excludes the therianthrope motifs which do have composite heads but can be identified by different musculature (see Section 7.5; Taçon and Chippindale 2001a). Beyond the depiction of a motif's head, other evidence demonstrates that Dynamic Figure motifs are depicted wearing headdresses. In 2015 at Djidbidjidbi, we recorded two large stencilled objects that appear to be headdresses, an interpretation supported by other researchers (Chaloupka 1984b:94; Lewis pers. comm. 2014). Also in the Deaf Adder Creek area, a row of traced or outlined headdresses has been recorded which are reminiscent of Dynamic Figure headdresses (Chaloupka 1984b:230, Site 131; Lewis 2014 pers. comm.; Taçon pers. comm. 2016).

**Table 7.3. Depiction of Dynamic Figure heads in Jabiluka**

| Label | Count |
|---|---|
| TRUE | 165 (79%) |
| Not possible | 23 (11%) |
| FALSE | 21 (10%) |
| **Total** | **209** |

*Figure 7.3. Traced reproduction of motifs where the head is depicted on the left and not depicted on the right. Top row left to right: I10046:75:3; 130030:56:1; I10007:5:3; 130030:18:4:1; bottom row 130030:50:2; I10053:38:1 (not to scale).*

*Figure 7.4. Possible stencil of a headdress at Djidbidjidbi with P.S.C. Taçon acting as a scale.*

### 7.2.4 Dynamic Figure motif infill

Table 7.4 is a count of the different Dynamic Figure infill types. 'Line' infill was defined as long parallel lines inside a motif's body and legs, in contrast to 'dash' infill which were short unjoined line strokes. 'Line' infill was the most common, 51% (n=107), and no infill and shaded were both less than 20% (n=38 and n=40 respectively). Other infill types were uncommon and the 'line and shaded' type may be the result of taphonomic conditions, preservation and superimposition, rather than a deliberate choice by artists.

**Table 7.4. Dynamic Figure infill types in Jabiluka**

| **Label** | **Count** |
|---|---|
| Line | 107 (51%) |
| Shaded | 40 (19%) |
| No infill | 38 (18%) |
| Dash | 9 (4%) |
| Line and shaded | 8 (4%) |
| Not possible | 7 (3%) |
| **Total** | **209** |

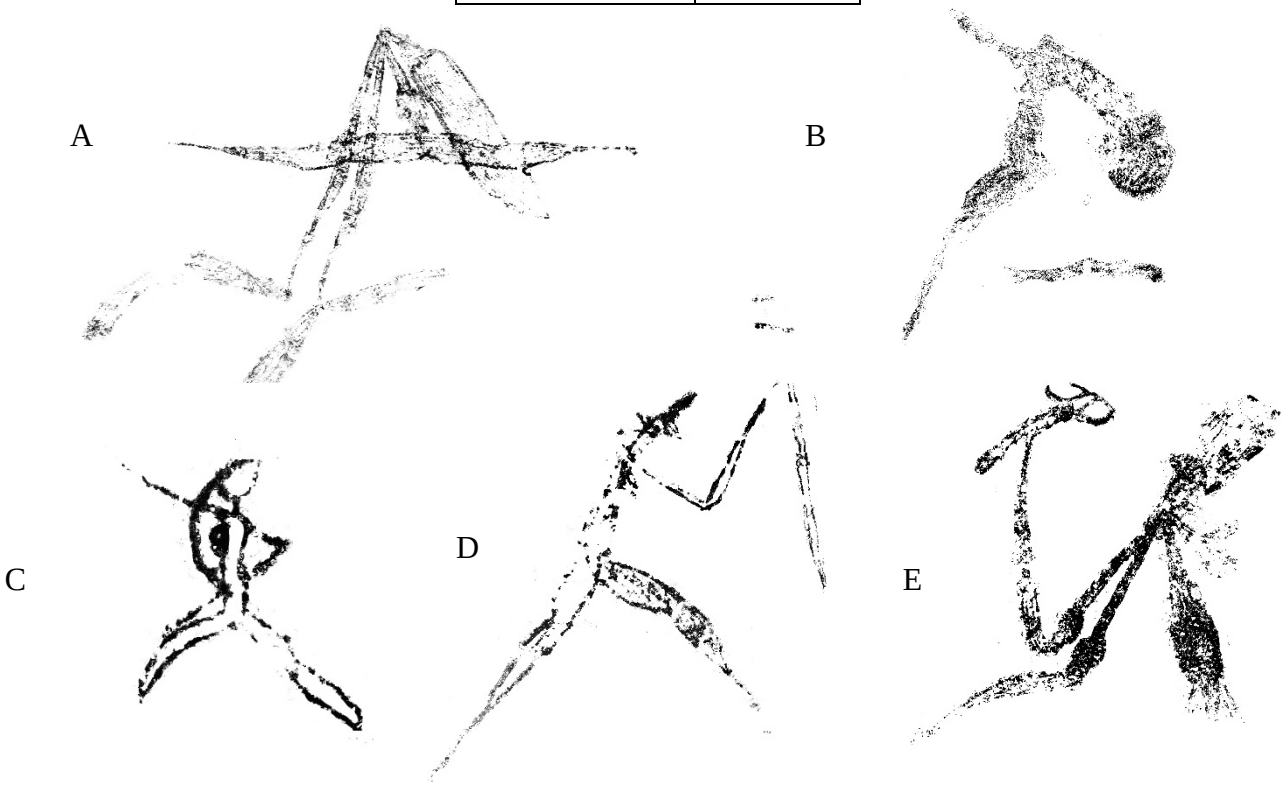



*Figure 7.5. Traced reproduction motifs showing the different infill types: (A) line infill I10019:1:1; (B) shaded I10007:5:2; (C) no infill R10037:12:1; (D) I10063:14:1; (E) line and shaded I30150:43:1 (not to scale).*

### 7.3. Dynamic Figure motif arms

The arms of Dynamic Figure motifs were recorded as four parts: upper arm, lower arm, wrist and hand. The two arm parts were recorded as having either defined or undefined musculature. Further categories were developed as the recording progressed, these were: ‘single line arms’, ‘parallel line arms’ which are like single line arms yet the artists had clearly drawn two lines from shoulder to hand but had not explicitly drawn the musculature and fully defined arms which is principally the same as ‘muscular upper arm, muscular lower arm and single line wrists’ but the wrists consist of two parallel lines. Figure 7.6 are examples of each arm type and Table 7.5 shows a count of the different arm types recorded in Jabiluka.

**Table 7.5. Dynamic Figure motif arm muscles**

| **Label** | **Count** |
|---|---|
| Undefined upper arm, muscular lower arm, single line writs | 61 (29%) |
| Single line arms | 50 (24%) |
| Muscular upper arm, muscular lower arm and single line wrists | 41 (20%) |
| Parallel line arms | 28 (13%) |
| Not possible | 20 (10%) |
| Muscular upper arm, undefined lower arm, single line wrists | 7 (3%) |
| Fully defined arms | 2 (1%) |
| **Total** | **209** |

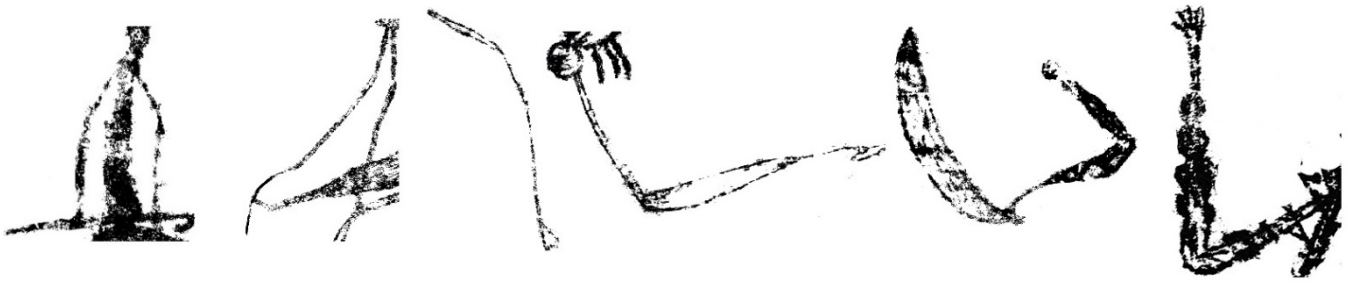


*Figure 7.6. Examples of arm muscle forms. From left single line arms (I10034:70:4); parallel line arms (I20183:64:1); muscular upper arm, undefined lower arm, single line writs (I30028:7:1); undefined upper arm, muscular lower arm, single line wrists (I30030:56:1); muscular upper arm, muscular lower arm and single line wrists (I30175:82:1); fully defined arms (I10049:35:2) (not to scale).*

.

### 7.3.1 Dynamic Figure motif arm poses

Dynamic Figure motifs were recorded in many various poses; however, certain arm poses were observed on repeated occasions (see Figure 7.7). Table 7.6 shows a count of identified arm poses recorded in the Jabiluka assemblage. Fifty-seven motifs were observed to have repeated arm poses; however, more are likely to exist that may have been too poorly preserved to recognise or depicted too infrequently to identify just from the study area. It is also possible that 'curved elbow' is not a specific repeated arm pose but coincidental because it was recorded upon so few occasions.

**Table 7.6. Dynamic Figure arm poses**

| **Label** | **Count** |
|---|---|
| Crooked elbow | 29 (51%) |
| Holding weapons below splits | 11 (5%) |
| Full power swing | 8 (4%) |
| Curved elbow | 6 (3%) |
| Arm bumps | 3 (1%) |
| **Total** | **57** |

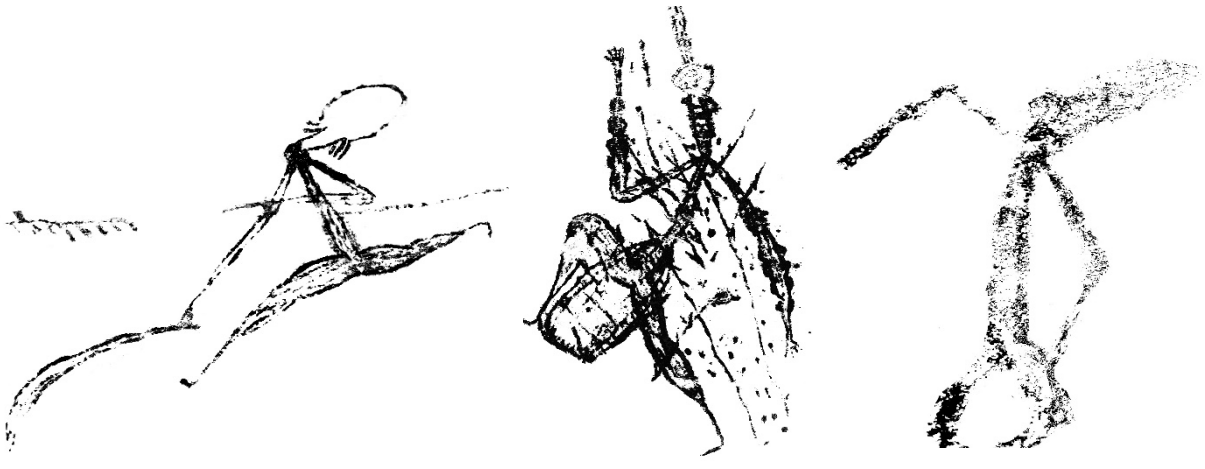


*Figure 7.7. Examples of arm poses: (from left) 'crooked elbow' (I30143:36:1); 'arm bumps' (I10049:35:2); 'curved elbow' (I10007:5:1). Also, Figure 7.2 is an example of the holding weapons below splits and full power swing (not to scale).*

Certain arm poses were associated with different arm muscle forms. For instance, 13 of the 29 ‘crooked elbow’ motifs also had the more defined arm muscle form, ‘muscular upper arm, muscular lower arm and single line wrists’. Certain poses were also dependent upon leg poses, ‘holding weapons below splits’ was dependent upon the motif being in the ‘splits pose’. Only one Dynamic Figure motif had clear ‘arm bumps’, while another motif and a therianthrope also appear to have arm bumps but the preservation was not ideal. ‘Arm bumps’ and the ‘full power swing’ were arm forms observed by previous researchers (Chaloupka 1993a:115,1984b:306; Lewis 1988:193, Figure 39).

### 7.3.2 Dynamic Figure motif hand types

Dynamic Figures motifs were recorded with various hand types and on four occasions artists had clearly depicted the fingers (Figure 7.8, Table 7.7). As with arm poses, certain hand types were associated with different arm forms. For instance, most of the ‘single line arms’ had ‘point’ hands (n=40), while the more detailed arm muscle forms (‘not defined upper arm, muscular lower arm, single line wrists’ etc.) had the ‘defined’ and ‘triangle’ hands.

**Table 7.7. Dynamic Figure hand types**

| **Labels** | **Count** |
|---|---|
| Point | 92 (44%) |
| Circle | 44 (21%) |
| Not possible | 41 (20%) |
| Triangle | 23 (11%) |
| Defined hand | 9 (4%) |
| **Total** | **209** |

*Figure 7.8. Examples of hand types: (from left) ‘circle’ (I10024:27:5); ‘defined hand’ (I10012:8:2);’ point’ (130030:18:5); ‘triangle’ (I30028:7:1); ‘triangle with fingers’ (I10049:35:2). For clarity, the whole arm is included in the circle and point examples and the bottom part of the lower arm is included in the defined hand example (not to scale).*

### 7.3.3 Dynamic Figure motif arm multiple correspondence analysis plot

Figure 7.9 is a MCA plot of the infill, arm muscle form and hand types of the Jabiluka Dynamic Figure motifs. This plot shows that three groups are formed from this data. The first and not significant group is the ‘not possible’ on the left of centre, these labels group together because if the arm muscles could not be determined most likely neither could the hand type. Similarly, the internal details were more likely to be undetermined on poorly preserved motifs.

The two remaining groups are more significant. The lower group of ‘no infill’, ‘single line arms’ and ‘pointed’ hands represents Dynamic Figure motifs with the least detailed attributes. Within this group therianthropes would also appear. The upper group of more detailed Dynamic Figures consists of ‘line’ infill, the variations of upper and lower defined muscles and single line wrist with ‘circle’, ‘defined’ hand and ‘triangle’ hands. This group contains the more detailed Dynamic Figure motifs. These two groups suggest that Jabiluka assemblage contains two Dynamic Figure types partly defined by the infill, musculature form and hand types of the motifs. The ‘fully defined arm’ motifs are grouped closer to the more detailed Dynamic Figure group but have pulled further away as there were so few recorded examples of this arm muscle form.

These groups should not be overstated, as the points fall close to the centre axis and there were some overlaps between the two groups. The infill types ‘shaded’ and ‘dash’ do not directly correlate with either group. In short, Figure 7.9 suggests that two broad types of Dynamic Figure motifs exist in Jabiluka, characterised by their infill and the complexity of their hand and musculature. However, these groups were part of a broadly homogenous Dynamic Figure assemblage, where these infill, musculature and hands types were used by artists painting either form.

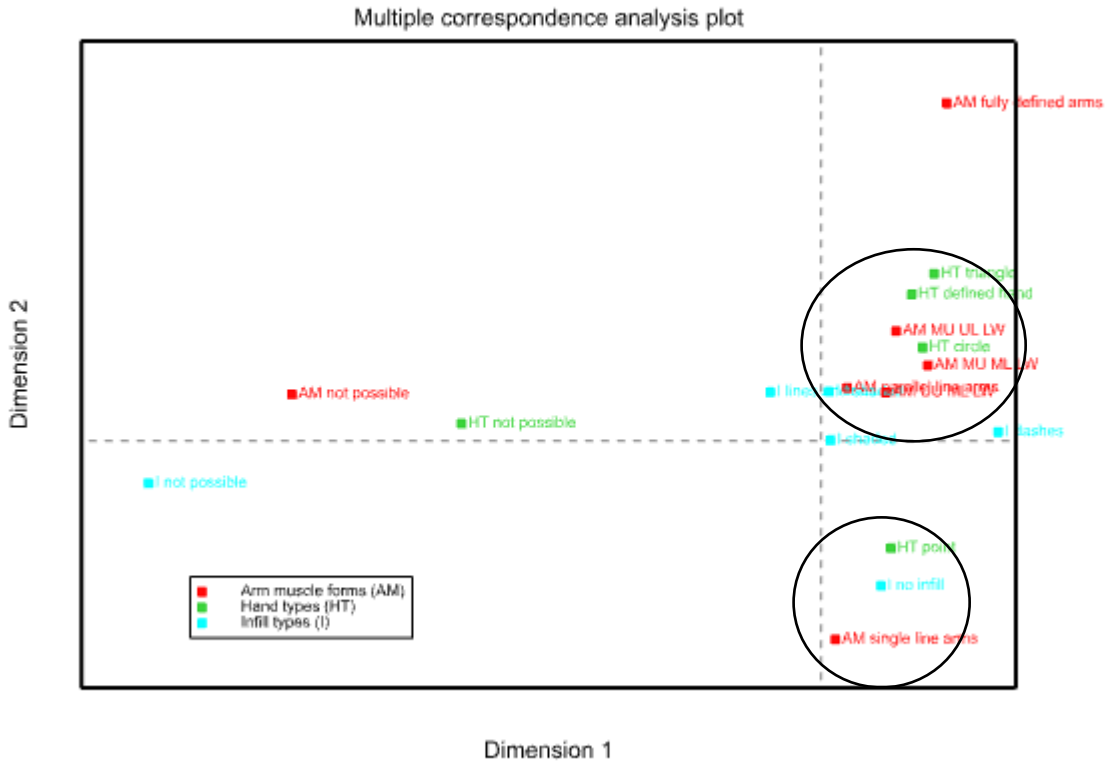



*Figure 7.9. MCA plot of the infill, arm muscle form and hand types of the Jabiluka Dynamic Figures. Key: UU ML LW undefined upper arm, muscular lower arm, single line wrists; MU, UL, LW muscular upper arm and single line lower arms; MU, ML, LW upper arm muscles, forearm muscles and single line wrists.*

### 7.4. Dynamic Figure motif legs

Dynamic Figure motifs' legs were recorded with similar categories to the arms. The leg was divided into the upper leg, lower leg, ankle and foot and the musculature of each section were recorded as defined or undefined. Unlike arm musculature, one leg type dominated — 'upper leg muscles, lower leg muscles and single line ankle' (59%, n=123, Table 7.8). Figure 7.10 is an example of each of the Dynamic Figure leg musculature types.

**Table 7.8. Dynamic Figure motif leg muscles**

| **Labels** | **Count** |
|---|---|
| Upper leg muscles, lower leg muscles and single line ankle | 123 (59%) |
| Upper leg muscles, single line lower leg | 34 (16%) |
| Not possible | 21 (10%) |
| Parallel line legs | 17 (8%) |
| Single line leg muscles | 10 (5%) |
| Fully defined legs | 4 (2%) |
| **Total** | **209** |

*Figure 7.10. Examples of leg muscle forms: (from left) 'single line legs' (I10024:27:2); 'parallel line legs' (I10019:2:1); 'upper leg muscles, single line lower leg' (I30175:83:1); 'upper leg muscles, lower leg muscles and single line ankle' (I30030:56:1); 'fully defined legs' (I1 0046:13:1) (not to scale).*

### 7.4.1 Dynamic Figure motif splits pose

Table 7.9 shows a count of the 'splits' leg posed Dynamic Figures. This pose was recorded on considerably more occasions than other leg poses (36%, n=76) or arm poses (see Figure 7.11).

**Table 7.9. Dynamic Figure motifs recorded in the splits pose**

| **Label** | **Count** |
|---|---|
| Not splits pose | 121 (58%) |
| Splits pose | 76 (36%) |
| not possible | 12 (6%) |
| **Total** | **209** |

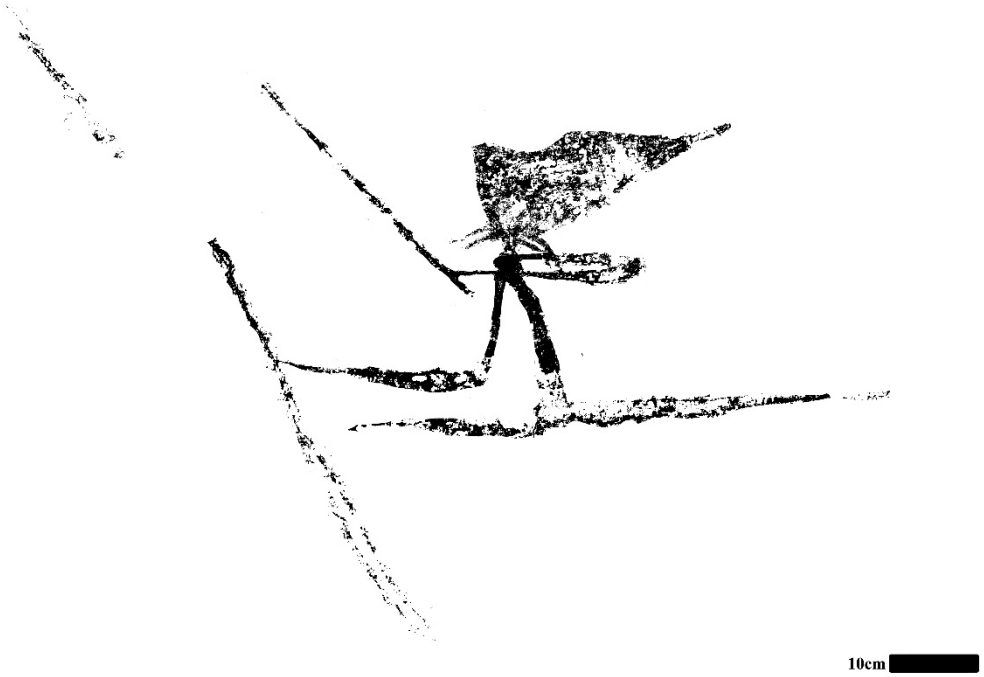



*Figure 7.11. Traced reproduction of motif I10046:75:1, exhibiting the splits pose.*

### 7.4.2 Dynamic Figure motif leg poses

Beyond the splits pose, there were few identified leg poses. Table 7.10 shows a count of the instances of 'bending' motifs, a form noted by Chaloupka (1993a:115). The other form is the 'combined perspective' recorded on 16 occasions, where four lines are drawn to form the front and back of the legs while the subject is in a profile perspective (see Chapter 3; Lewis 1988:42). I use the term 'combined perspective' as this attribute is observed on more than just the legs of motifs (see Chapter 9). Two motifs had both the bending and combined perspective form (Figure 7.12).

**Table 7.10. Dynamic Figure leg poses**

| **Labels** | **Count** |
|---|---|
| Combined perspective | 16 |
| Bending | 6 |
| **Total** | **22** |

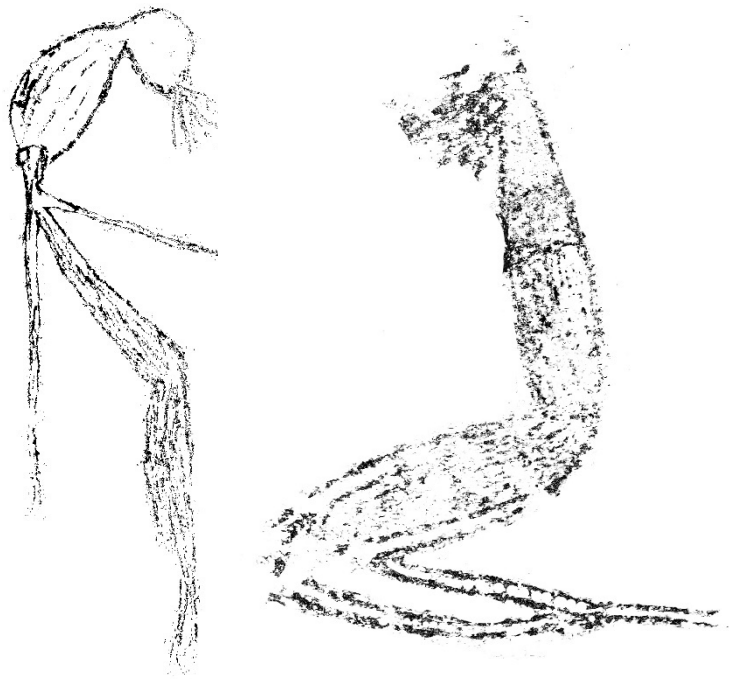


*Figure 7.12. Examples of leg poses: (from left) 'bending' pose (I10012:8:2); 'combined perspective form' (I10019:3:4) (not to scale).*

### 7.4.3 Dynamic Figure motif feet types

Five types of Dynamic Figure feet were recorded, as shown in Table 7.11 and Figure 7.13. ‘Hook’ and ‘point’ were the most numerous comprising more than half of the feet types recorded.

**Table 7.11. Dynamic Figure feet types**

| **Labels** | **Count** |
|---|---|
| Hook | 78 (37%) |
| Point | 70 (33%) |
| Not possible | 37 (18%) |
| Circle | 11 (5%) |
| Defined foot | 10 (5%) |
| Complete foot | 3 (1%) |
| **Total** | **209** |

*Figure 7.13. Examples of leg types: (from left) ‘hook’ (I10049:35:2), ‘circle’ (I30143:36:1); ‘defined foot’ (130030:51:3); ‘point’ (I10019:3:4); ‘complete’ (I10046:13:1) (not to scale).*

### 7.4.4 Dynamic Figure motif leg multiple correspondence analysis plot

Figure 7.14 is an MCA plot of the infill, leg muscle forms and feet types of the Jabiluka Dynamic Figure motifs. This plot shows three groups, as with Figure 7.9 the ‘not possible’ responses grouped separately and together. A second group consisted of ‘fully defined legs’ and ‘complete’ feet. As there were so few of these types recorded and they were only recorded together, they group tightly and away from the other labels. The pull of these two groups, correlated the other points together and at the axis of the graph; therefore, the fully defined legs were remove in the next MCA.

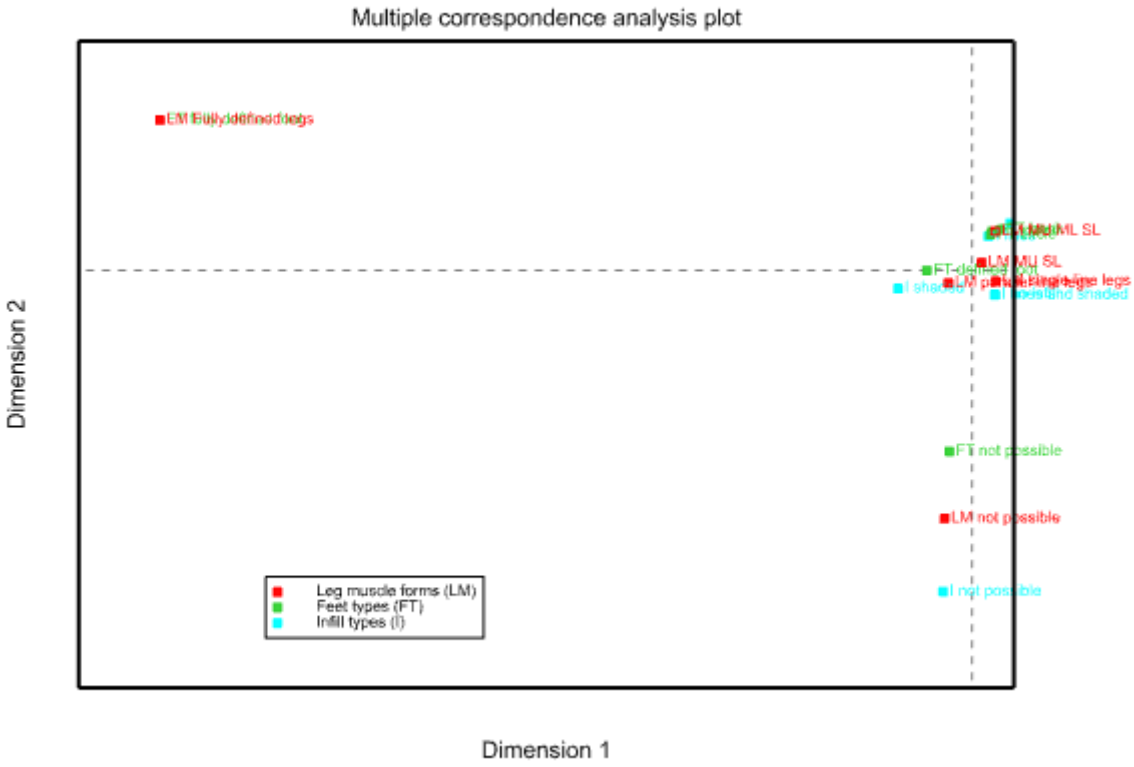



*Figure 7.14. MCA plot of the infill, leg muscle form and feet types of the Jabiluka Dynamic Figures. Key: MU, ML, SL upper leg muscles, lower leg muscles and single line ankle; MU, SL upper leg muscles, single line lower leg.*

Figure 7.15 illustrates a similar type separation to Figure 7.9. The top group was the most detail leg forms - 'upper leg muscles, lower leg muscles and single line ankle' with 'hook' feet and 'line' or 'dash' infill. This is like the other detailed group of arm muscle types. The less defined group is further spread but consists of leg muscle types, 'upper leg muscles single line lower leg' and 'parallel line legs' and grouped with shaded infill. This group corresponds, as with Figure 7.9, with the less detail arm muscle group of Dynamic Figure motifs.

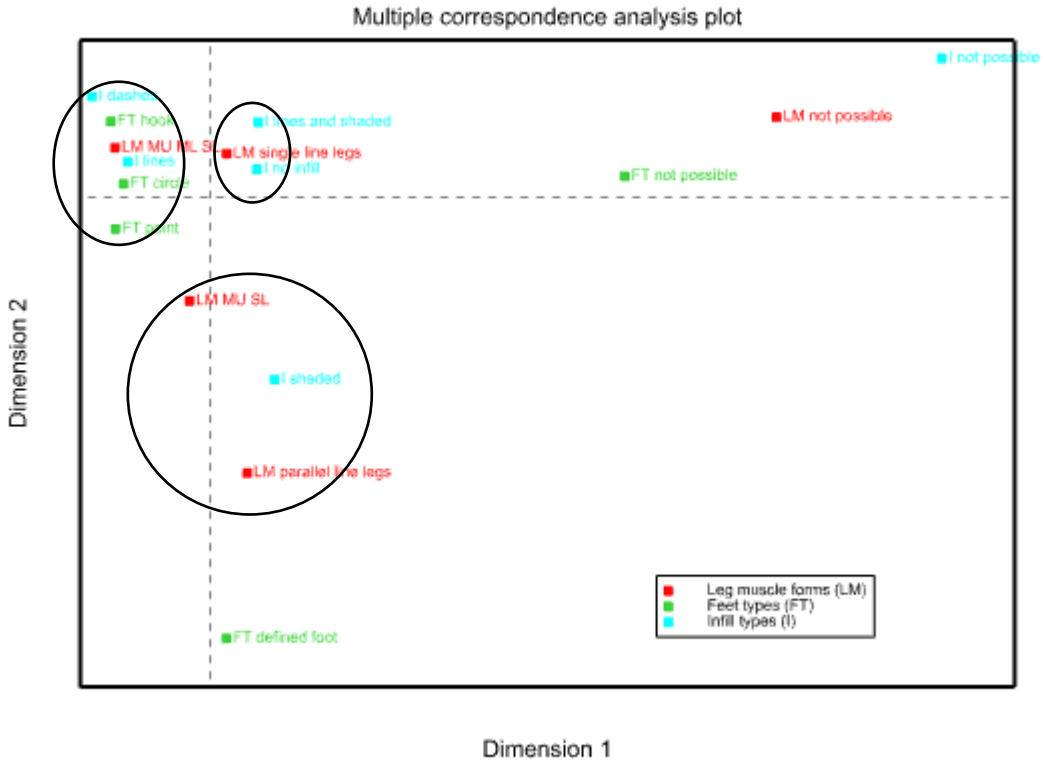



*Figure 7.15. MCA plot of the infill, leg muscle form and feet types of the Jabiluka Dynamic Figures with the fully defined legs and feet excluded. Key: MU, ML, SL upper leg muscles, lower leg muscles and single line ankle; MU, SL upper leg muscles, single line lower leg.*

In plot 7.15, unlike Figure 7.9, a further group was observed consisting of ‘single line leg’ muscles and ‘no infill’. This group consists of the therianthrope motifs, which are the only motif to have this leg muscle form. This group fell near the defined Dynamic Figure form as they had pointed feet as well. This group was not isolated in Figure 7.9 as human figure motifs could have single line arms, yet only therianthropes were recorded with ‘single line legs’ as well.

Three motif types were observed in the Jabiluka Dynamic Figure art according to the infill and leg muscle attributes. These were: defined musculature, less defined musculature and therianthrope. However, as with Figure 7.9, the closeness of these groups to the central axes suggests a broad homogeneity to the whole assemblage.

### 7.4.5 Dynamic Figure types recorded at Jabiluka

Figure 7.16 is the combined MCA plot of the arm and leg muscle forms and feet and hand types. As with the previous MCA plots 'not possible' labels grouped together on the far right of the graph.

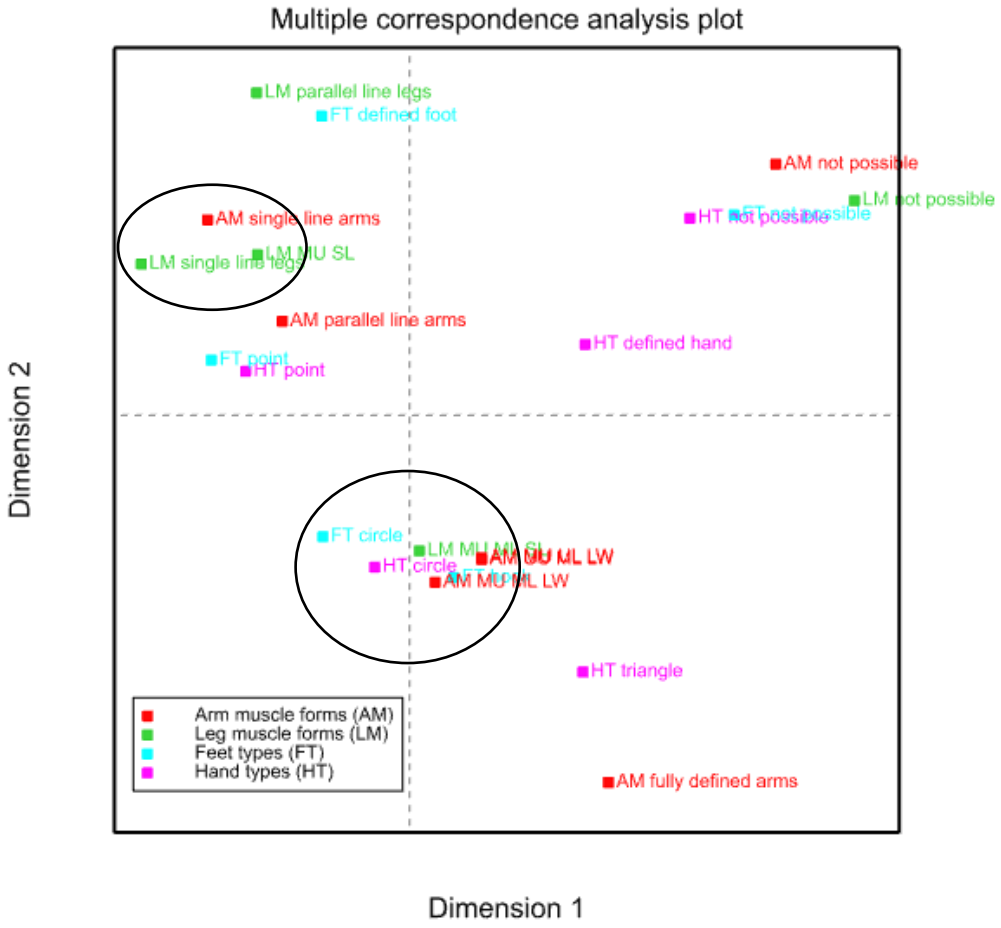



*Figure 7.16. MCA plot of arm and leg muscle form with feet and hand types. Key: UA, MA, LW undefined upper arm, muscular lower arm, single line wrists; MA, UL, LW muscular upper arm and single line lower arms; MA, ML, LW upper arm muscles, forearm muscles and single line wrists; MU, ML, SL upper leg muscles, lower leg muscles and single line ankle; MU, SL upper leg muscles, single line lower leg.*

The bottom group represents the detailed and defined Dynamic Figure motifs which most likely had 'upper arm muscles, forearm muscles and single line wrists' or 'undefined upper arm, muscular lower arm, single line writs' arms, 'circle' or 'triangle' hands, 'upper leg muscles, lower leg muscles and single line ankle legs' and 'hook' feet. They also had 'muscular upper arm and single line lower arms'.

The top group are the less detailed and less defined Dynamic Figure motifs and therianthropes. ‘Single line’ arms grouped both these motif types together. The motifs most likely had ‘single line arms’, ‘parallel line’ legs or ‘upper leg muscles, single line lower leg’ and a ‘defined’ foot.

Despite these two groups, there are labels between them, such as ‘parallel line’ arms and ‘point’ hands and feet, which illustrates that not all Dynamic Figure motifs conform to the typical detailed and less detailed forms described. Figure 7.17 demonstrates this as this MCA plot incudes individual points for Dynamic Figure motifs, the groups were not circled to make it easier to read but it’s the same plot as Figure 7.16. In Figure 7.17, the clusters of Dynamic Figure motif points around each attribute group show the motifs that most conform to that group, motifs further away from these groups are motifs with less typical combinations of attributes. This illustrates that there is homogeneity within the Jabiluka assemblage as Dynamic Figure motifs were recorded with various combinations of the musculature forms and hand and feet types.

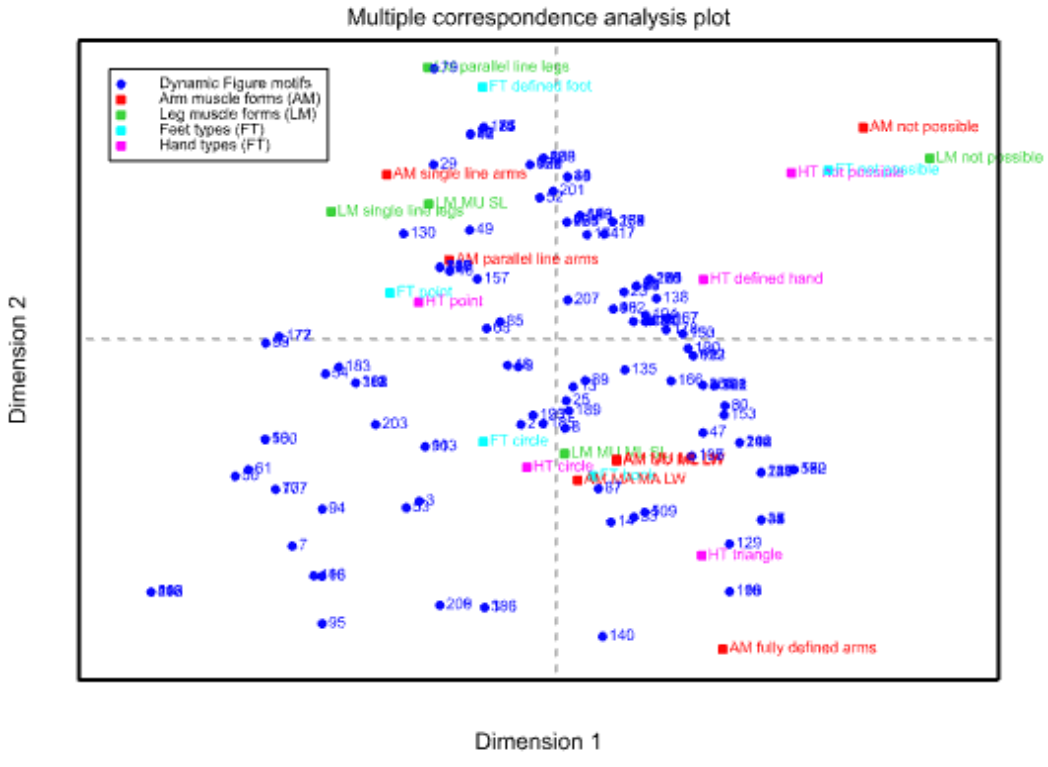



*Figure 7.17. MCA plot of arm and leg muscle form with feet and hand types which includes Dynamic Figure motif points. Key: UA, MA, LW undefined upper arm, muscular lower arm, single line wrists; MA, UL, LW muscular upper arm and single line lower arms; MA, ML, LW upper arm muscles, forearm muscles and single line wrists; MU, ML, SL upper leg muscles, lower leg muscles and single line ankle; MU, SL upper leg muscles, single line lower leg.*

The largely homogenous group of Dynamic Figure motifs of Jabiluka has within it two manners of depiction. These are the detailed and defined Dynamic Figure motifs and the less detailed and less defined Dynamic Figure motifs. Figure 7.18 shows two typical examples of these Dynamic Figure motif forms. These manners also demonstrate that the most defining attributes of Dynamic Figure types are the arm and leg musculature as these points are most clustered and have fewer variations unlike hands and feet. From this section forward, musculature is used as the primary attribute in the CA to further define these types, while also reducing the overall points on subsequent graphs.

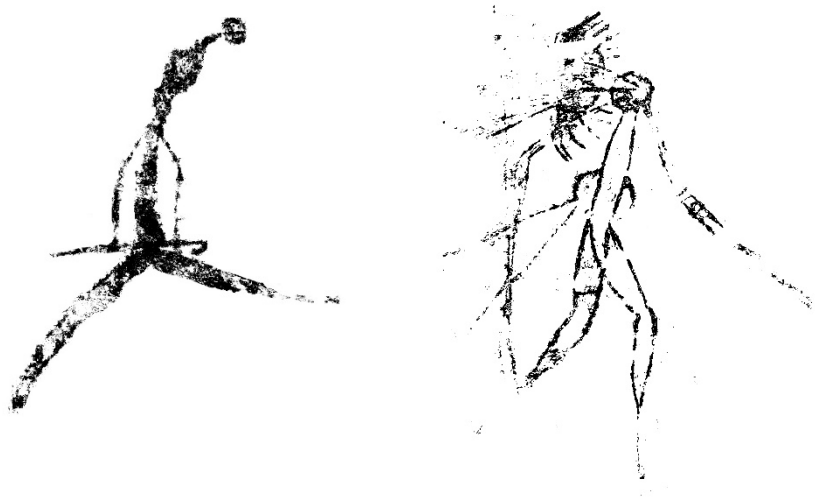


*Figure 7.18. Example of the less detailed and less defined Dynamic Figure motif type (left: I10034:78:4) and the detailed and defined Dynamic Figure motifs (right: I3 0030:60:1) (not to scale).*

### 7.5. Dynamic Figure therianthropes recorded at Jabiluka

Table 7.12 shows a count of the Dynamic Figure therianthrope motifs. These are identified by having an animal head and a human body. Almost all had 'single line' arms and legs and small bodies. Figure 7.19 are examples of the four head types recoded in Jabiluka. Two of these head types appear to depict therianthropes wearing headdresses, I10046:76:2 and I10049:35:3, which may be unique to Jabiluka. Table 7.13 counts the different types of therianthrope heads, many are hard to identify as specific animals but do occur on more than one occasion. Taçon and Chippindale (2001a:190) also struggled to identify some of the therianthropes they recorded and type 4 might be their 'cone head' type.

**Table 7.12. Dynamic Figure therianthropes in Jabiluka**

| **Labels** | **Count** |
|---|---|
| Human figure | 191 (91%) |
| Therianthrope | 14 (7%) |
| Not possible | 1 (>0%) |
| **Total** | **209** |

**Table 7.13. Types of Dynamic Figures therianthrope heads**

| **Labels** | **Count** |
|---|---|
| 1 (macropod) | 4 (29%) |
| 4 (unknown) | 4 (29%) |
| 2 (beaked) | 3 (21%) |
| Not Possible | 2 (14%) |
| 3 (unknown) | 1 (7%) |
| **Total** | **14** |

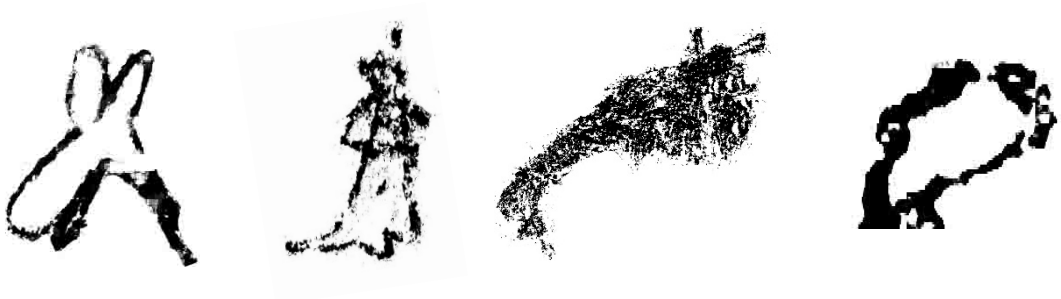


*Figure 7.19. Examples of therianthrope head types: (from left) 1-macropod (I30175:82:3), 2-beaked (I10049:35:3); 3 (I10046:76:2); 4 (110113:89:1) (not to scale).*

## 7.6. Dynamic Figure material culture

This section outlines the material culture depicted with Dynamic Figure motifs. The clear majority of Dynamic Figure motifs are depicted wearing or carrying one or more types of material culture. In the Jabiluka assemblage, 93% (n=194) of the motifs possess one or more types (May et al. 2017a). In the rare occurrence where a motif is not depicted with a material culture object, especially a headdress, this absence often contributes to the narrative information of the scene (see Chapter 9).

In total, Dynamic Figures were depicted with fifteen different types of material culture. Some were recorded on few or single occasions while others were recorded numerous times. The various within material culture types also varied; while eighteen different types of headdresses were recorded only two types of boomerang and either two or three types of spear were recorded. The following section is used to argue for the significance of worn material culture and the efficiency of specific material culture objects as messengers of information within Dynamic Figure art.

### 7.6.1 Overview of worn Dynamic Figure material culture in Jabiluka

Dynamic Figures were depicted with five types of worn material culture. Table 7.14 is a count of motifs that are depicted wearing each material culture type. The most common items are worn body adornments: headdresses, hair belts and necklaces. Each of these categories was drawn from the literature review and ethnographic observations. Headdresses, necklaces and arm bands are defined per their common usage, material culture worn on or around the head, neck or arm. Motifs were identified as female by the depictions of breasts and were recorded as not wearing a headdress but having a hair style, see below and Chapter 10. Therianthropes were recorded as not having headdresses with rare exceptions. Hair belts could have been identified simply as belts but the usage hair belt reflected the prominence of this belt type in ethnographic records and its usage for describing Dynamic Figures (Chaloupka 1984b:viii; Warner 1958:477,480). These are interpreted as belts because some motifs clearly have boomerangs tucked into them (Figure 7.20). Table 7.14 suggests a ritual context to Dynamic Figure art as headdresses are known to be made for ritual occasions (e.g., Chaloupka 1993a:110) and they are the most prevalent worn material culture type. This is discussed further in Chapter 9 and 10.

**Table 7.14. Overview of worn material culture**

| Material culture | Headdresses | Necklaces | Hair belts | Pubic skirts | Arm bands |
|---|---|---|---|---|---|
| **Present** | 148 (71%) | 148 (71%) | 148 (71%) | 22 (11%) | 25 (25%) |
| **Absent** | 49 (23%) | 49 (23%) | 49 (23%) | 175 (84%) | 163 (78%) |
| **Not possible** | 12 (6%) | 12 (6%) | 12 (6%) | 12 (6%) | 21 (10%) |
| **Total** | **209** | | | | |

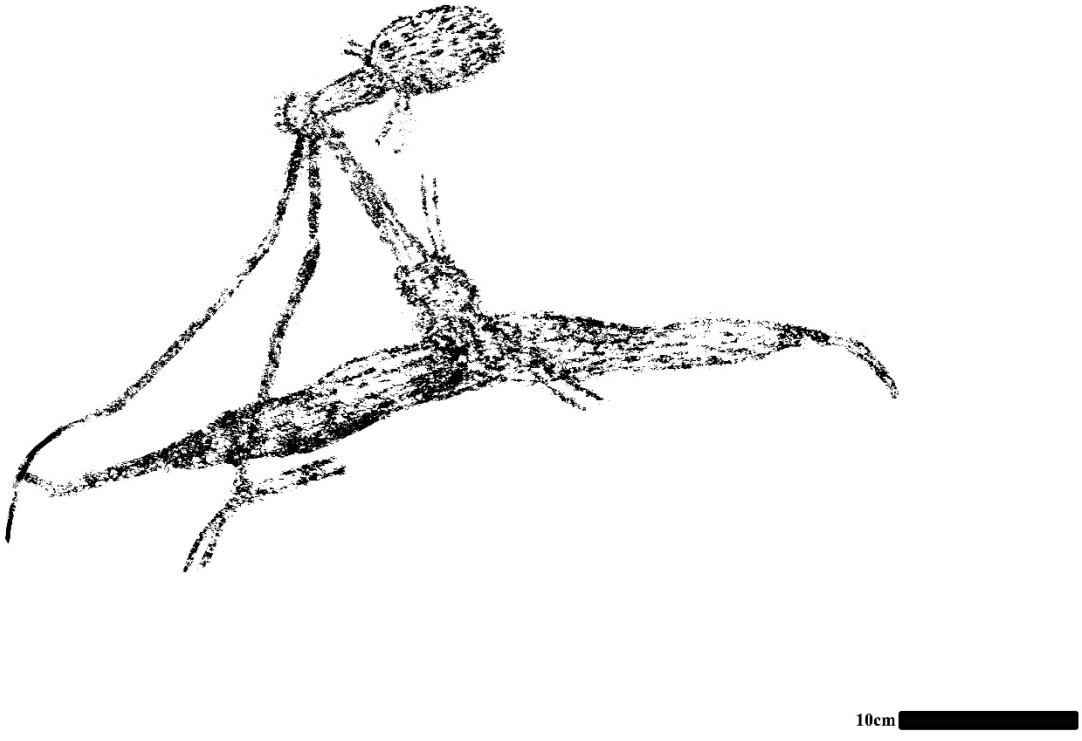



*Figure 7.20. Traced reproduction of motif I2 0183:64:1 illustrating a headdress, necklace and boomerangs tucked into its hair belt.*

### 7.6.2 Overview of carried Dynamic Figure material culture in Jabiluka

Dynamic Figures were depicted with ten types of carried material culture. Table 7.15 is a count of motifs that are depicted carrying each material culture type. The most recorded types were spears and boomerangs, while many of the material culture types were recorded upon very few occasions.

**Table 7.15. Overview of carried material culture**

| Material culture | Spear | Boomerang | Dilly bag | Stick | Round object | Club | Digging stick | Hook stick | Hafted axe | Lithic |
|---|---|---|---|---|---|---|---|---|---|---|
| **Present** | 66 (32%) | 60 (29%) | 21 (10%) | 9 (9%) | 5 (2%) | 2 (1%) | 2 (1%) | 2 (1%) | 1 (>1%) | 1 (>1%) |
| **Absent** | 126 (60%) | 132 (63%) | 172 (82%) | 200 (96%) | 186 (89%) | 190 (91%) | 190 (91%) | 207 (99%) | 193 (92%) | 191 (91%) |
| **Not possible** | 17 (8%) | 17 (8%) | 16 (8%) | 0 (0%) | 18 (9%) | 17 (8%) | 17 (8%) | 0 (0%) | 15 (7%) | 17 (8%) |
| **Total** | **209** | | | | | | | | | |

The prevalence of worn material culture compared to carried material culture is observed in Tables 7.14 and 7.15. Furthermore, the count of spear and boomerang are not completely comparable to the worn material culture count as one motif may carry a boomerang and a spear, recorded on 21 occasions, while no motif had more than one headdress, necklace or hair belt. Therefore, the count of worn material culture was considerably higher than all carried material culture. The higher count of worn material culture types suggests they have greater significance in the whole assemblage, as will be discussed in Chapter 9.

### 7.6.3 Dynamic Figure motif type and material culture multiple correspondence analysis plot

Figure 7.21 is an MCA plot of the whether a motif carried a boomerang or a spear and its muscular form. The other material culture types were excluded because there were so few examples of each. This plot generally shows that there is not a major distinction between Dynamic Figure types and carried material culture, as they fall close to the axes. However, the more defined Dynamic Figures were more likely to have spears, while boomerangs are less associated with a specific Dynamic Figures type.

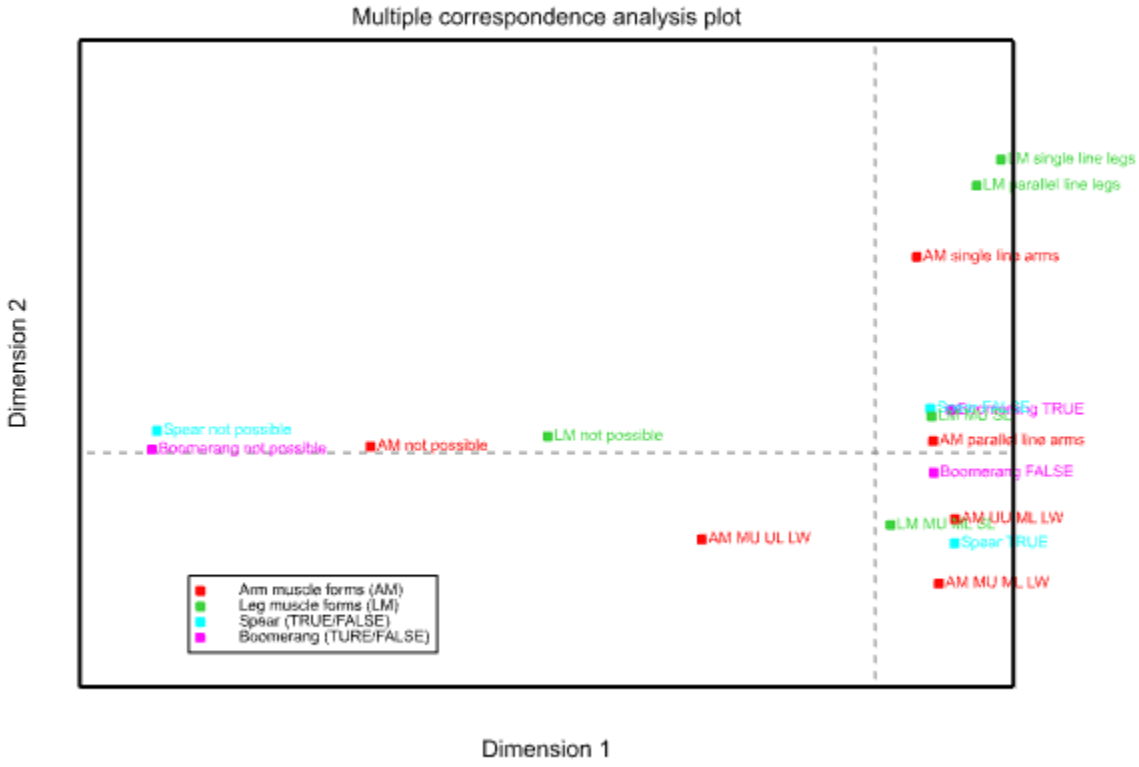



*Figure 7.21. MCA plot of arm and leg muscle forms and the presents or absence of spears and boomerangs. Key: UA, MA, LW undefined upper arm, muscular lower arm, single line wrists; MA, UL, LW muscular upper arm and single line lower arms; MA, ML, LW upper arm muscles, forearm muscles and single line wrists; MU, ML, SL upper leg muscles, lower leg muscles and single line ankle; MU, SL upper leg muscles, single line lower leg.*

### 7.7. Dynamic Figure necklets and necks

Necklaces and neck types were combined into one label as it was observed that artists had on occasion not painted the neck of a motif but instead painted a necklace in its place. The various neck and necklace types were developed into the labels for Table 7.16 (see Figure 7.22 for examples).

**Table 7.16. Dynamic Figure neck types**

| **Labels** | **Count** |
|---|---|
| Depicted from necklace | 70 (33%) |
| No defined neck | 59 (28%) |
| Defined neck | 48 (23%) |
| Not possible | 23 (11%) |
| Depicted through necklace | 7 (3%) |
| Single line neck | 2 (2%) |
| **Total** | **209** |

*Figure 7.22. Examples of neck types: (from left) 'defined neck' (I10012:8:2), 'depicted from necklace' (I10046:75:3); 'depicted through necklace' (I30030:60:1); 'no defined neck' (I10007:5:1); 'single line neck' (I30175:82:4) (not to scale).*

Figure 7.23 is MCA plot that includes neck types and the leg and arm muscle forms. This plot shows that the more detailed leg and arm muscle types are more associated with the ‘depicted from the necklace’ neck type and ‘through the necklace’. The ‘no defined neck’ and ‘defined neck’ correlated closer with the less defined Dynamic Figure and therianthrope group, although it is not a strong correlation. In summary, although certain neck and necklace types were associated with types of Dynamic Figures it does not define the groups as clearly as musculature form.

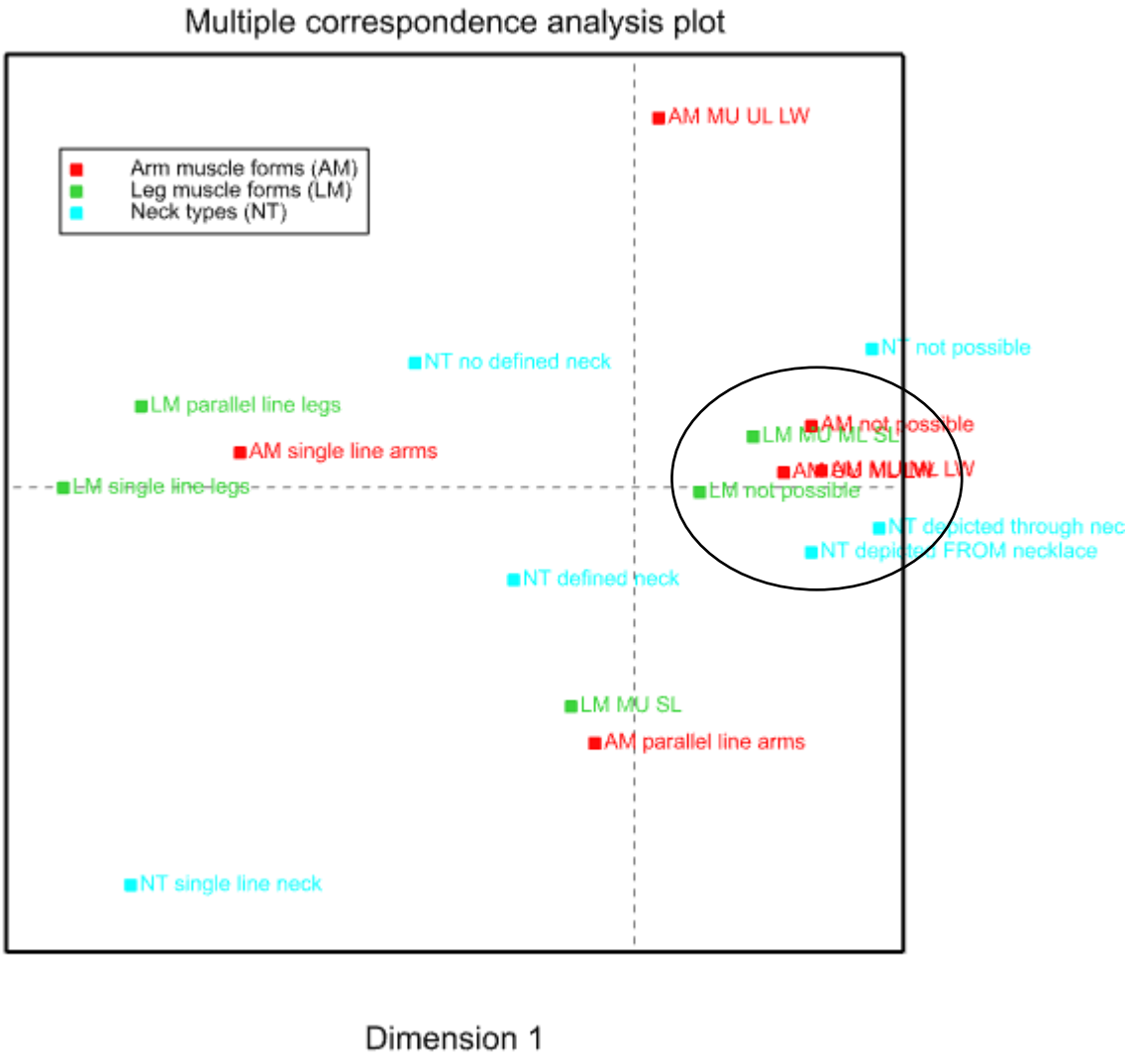



*Figure 7.23. MCA plot of the neck type and arm and leg muscle forms of the Jabiluka Dynamic Figures. Key: UA, MA, LW undefined upper arm, muscular lower arm, single line wrists; MA, UL, LW muscular upper arm and single line lower arms; MA, ML, LW upper arm muscles, forearm muscles and single line wrists; MU, ML, SL upper leg muscles, lower leg muscles and single line ankle; MU, SL upper leg muscles, single line lower leg.*

### 7.8. Dynamic Figure headdresses depicted in Jabiluka

Table 7.17 is a count of whether a Dynamic Figure motif wore a headdress in the Jabiluka assemblage. Headdresses were defined as large objects that were depicted on or around the head of a Dynamic Figure and could be interpreted as clearly distinct from the head of that human figure. Hair styles or hair adornments were defined as additions to the head but not clearly objects, these additions included parallel lines which were interpreted as the artists depicting the long hair of the human figure or a singular long line which was interpreted as a plait or a tied together bunch of hair. The distinction that female Dynamic Figures do not wear headdresses was drawn from the data and ethnographic sources. Ethnographic records from Arnhem Land do not contain many accounts of women wearing headdresses during ceremony (but see Magowan and Neuenfeldt 2005:134), although they do wear necklaces and arm bands during ceremonies which was reflected in the Jabiluka data (see Berndt and Berndt 1977:180-187). It must be noted that the dominance of male anthropologists in the early research of Arnhem Land will have biased the ethnographic information. However, in the Jabiluka assemblage, no motif depicted with breasts also wore an object on their head, although their hair styles do exhibit significant variation (see Figure 7.25). Headdress and female motifs are discussed further in Chapter 10.

Therefore, the count of headdresses excludes Dynamic Figures interpreted as female and therianthropes, as therianthropes very rarely wore headdresses and are not strictly human figures. Chaloupka has recorded a single female Dynamic Figure with a headdress and there are some therianthropes who wear headdresses, noted in Section 7.5 (Chaloupka 1984b:326, Site 184). As I have only had access to a sketch of the female Dynamic Figure with a headdress I cannot determine if I would have interpreted it as a headdress or a hair style. Table 7.17 shows that most motifs wore headdresses.

**Table 7.17. Dynamic Figure headdresses**

| **Labels** | **Count** |
|---|---|
| **True** | 148 (92.5%) |
| **Not possible** | 12 (7.5%) |
| **Total** | **160** |

### 7.8.1 Types of headdresses depicted in Jabiluka Dynamic Figure art

Headdresses had the most variation of any material culture type. In total 18 types of headdresses were recorded in the Jabiluka Dynamic Figure art assemblage (Table 7.18). Many of the headdress types had few examples: there was only one example each of five of the headdress types and only two examples of six of the headdress types. However, others were more prolific. There were 79 examples of oval headdresses and 25 examples of tassel headdresses recorded. It is important to note that variation exists within these groups, particularly oval, and further subdivision or amalgamations may be possible. At the same time preservation likely influenced the creation of certain groups for instance *tube with lines emanating from the end* and *tube with tassels* could be variation between artists depicting the same thing and not artists choosing to depicted different headdresses. However, the numerous variations of headdress types in Table 7.18 and Figure 7.24 demonstrates that artists were purposefully depicting different headdresses, instead of imperfect copies of one universal headdress type. It follows that headdress types formed part of the contextual information embedded within scenes by Dynamic Figure artists (see Chapter 9).

**Table 7.18. Types of Dynamic Figure headdresses**

| **Labels** | **Count** |
|---|---|
| Oval | 79 |
| Tassel | 25 |
| Rectangle | 8 |
| Tube with lines emanating from the end | 8 |
| Unique types | 5 |
| Circle | 4 |
| Fuzzy short | 4 |
| Circle with tassel | 3 |
| Fan | 2 |
| Hooked | 2 |
| Leaf | 2 |
| Three circles | 2 |
| Triangular | 2 |
| Tube with tassels | 2 |
| **Total** | **148** |

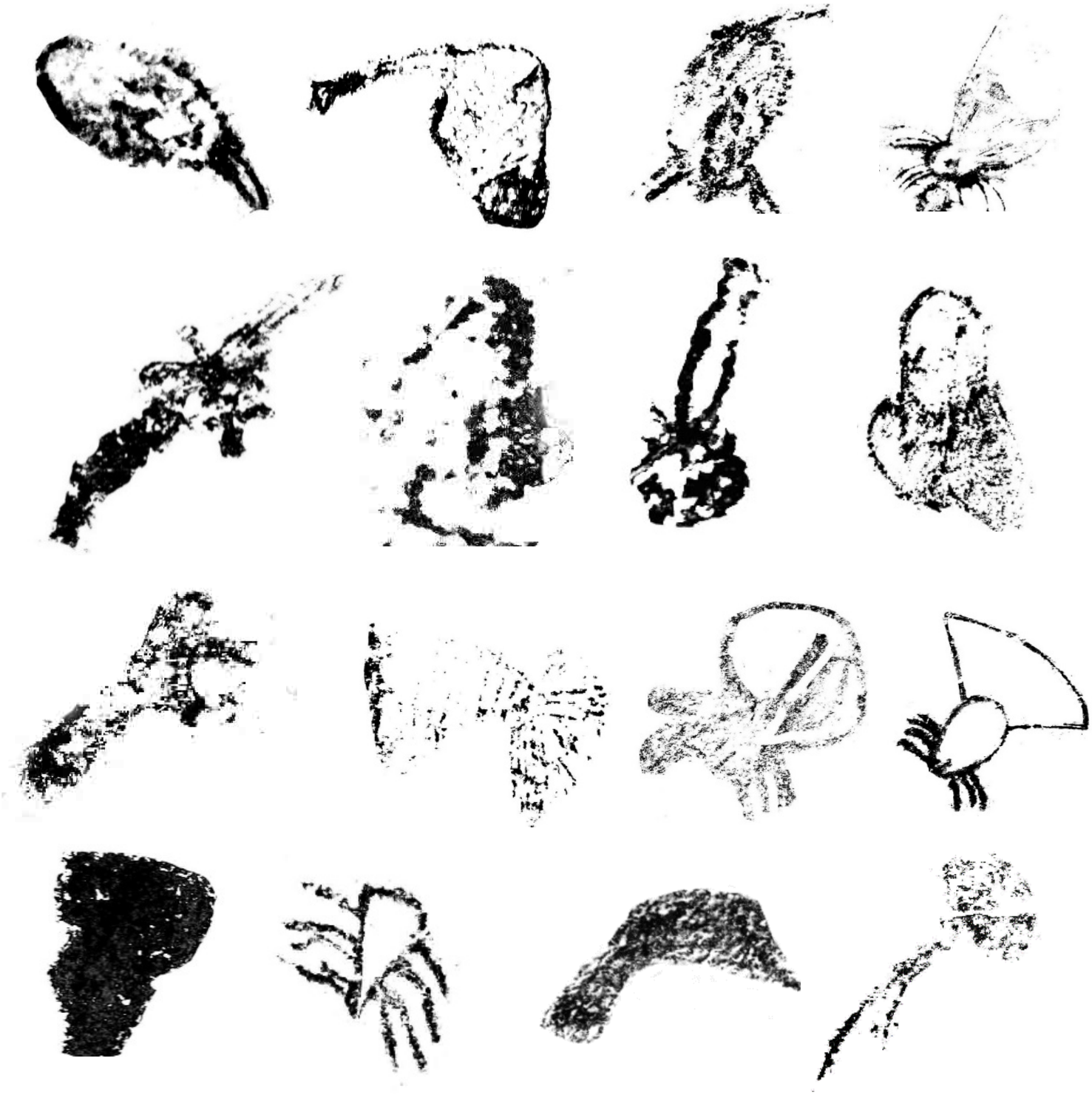


*Figure 7.24. Examples of various headdresses: (from left) oval (I10034:72:1), tassel (I10046:73:2); fuzzy short (I30030:54:2); triangle (I30030:60:2); Row two: circle with tassels (I10046:74:1); hook (I30173:16:1); rectangle (I10049:35:4); tree circles (I10046:77:1); Row three: tube with tassel (I10053:38:1); tube with lines emanating from the end (I10113:89:5); circle (I30030:56:1); fan (I30030:56:1); Row four: unique (I20183:68:1); no headdress (I30030:56:2); leaf (I10007:5:3); unique (I30030:18:4) (not to scale).*

### 7.8.2 Female hair adornments depicted in Jabiluka Dynamic Figure art

Female Dynamic Figures were recorded with various hair adornments or hair style types (Table 7.19). Figure 7.25 is an example of each of the female head adornment types. Many had only one example recorded but three had two examples and matted locks and plait had three and five examples respectively.

**Table 7.19. Types of female Dynamic Figure hair styles**

| Labels | Count |
|---|---|
| Plat | 5 |
| Matted locks | 3 |
| Bald | 2 |
| Long hair | 2 |
| Tall bun | 2 |
| Bun | 1 |
| Fuzzy short | 1 |
| Quiff | 1 |
| Undetermined lines | 1 |
| **Total** | **18** |

*Figure 7.25. Examples of various hair adornments: (from left) top row: bald (I30067:17:1), bun (I20183:61:1); matted locks (I10113:90:2); fuzzy short (I30173:15:2); bottom row: long hair (I10034:9:1); plat (I300030:18:7); quiff (I10034:710:2); tall bun (I10063:14:1) (not to scale).*

### 7.8.4 Jabiluka Dynamic Figure art headdress, hair style and head types MCA plot

Figure 7.26 is a MCA plot of the arm and leg muscle forms with the headdress, hair style and therianthrope types. This plot is not particular insightful because of the infrequency of certain variables within the data. In short, as so few of certain headdress, hair style and therianthrope types were recorded they will group too closely with their corresponding arm and leg muscle forms and skew the data. Predictably, the therianthrope head types grouped with single line legs, apart from beaked (type 2) which has one example of legs with muscular definition. This highlights the caution that must be applied to MCA analysis as without large enough samples a single data point can influence the results. The groupings in this plot do not suggest meaningful relationships between variables.

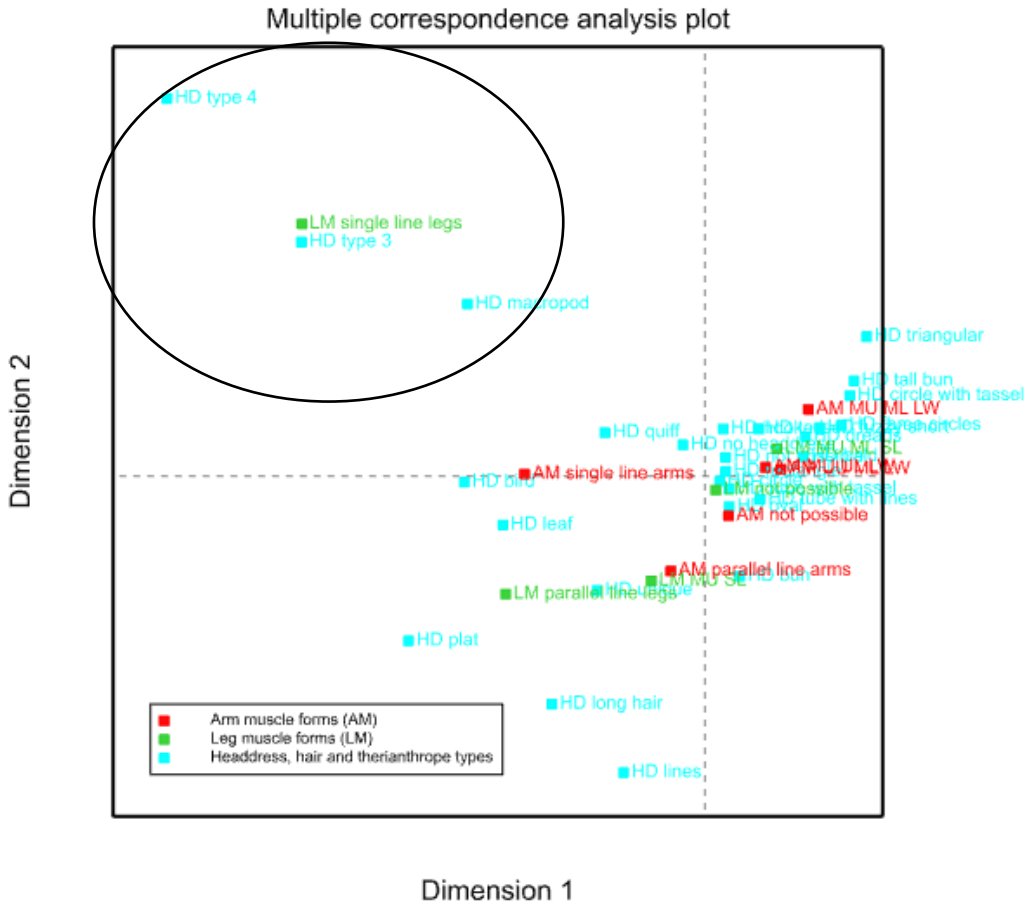



*Figure 7.26. MCA plot of headdresses and hair types, therianthropes and leg muscles. Key: UA, MA, LW undefined upper arm, muscular lower arm, single line wrists; MA, UL, LW muscular upper arm and single line lower arms; MA, ML, LW upper arm muscles, forearm muscles and single line wrists; MU, ML, SL upper leg muscles, lower leg muscles and single line ankle; MU, SL upper leg muscles, single line lower leg.*

Therefore, this MCA plot is better for considering general trends instead of specific relationships. For instance, this MCA plot suggests that generally, within the Jabiluka assemblage, headdress and hair styles did not significantly correspond with muscle forms. If the sample was increased to include all of Arnhem Land it may reveal significant trends in the future regarding choices by artists.

### 7.9. Types of pubic skirts depicted in Jabiluka Dynamic Figure art

Of the material culture in the Jabiluka assemblage, pubic skirts exhibited the second most variation, and nine types were recorded (Table 7.20). About half of the variants only had one example, three types had two examples and type 1, a triangular form, had 11 examples although there was variation within this type (see Figure 7.27). As with headdresses, the preservation of motifs influenced the ability to record in detail some of the pubic skirts and it is possible that subdivision or amalgamations of pubic skirt types maybe possible in a broader study. However, the clear variations of pubic skirt types in Table 7.20 and Figure 7.27 demonstrates that artists were purposefully depicting different pubic skirts, instead of imperfect copies of one universal pubic skirt type. Like headdresses and hair styles, but to a lesser degree because of their rarity, pubic skirts formed part of the contextual information embedded within motifs and scenes by Dynamic Figure artists.

**Table 7.20. Count of Dynamic Figure pubic skirt types**

| Pubic skirt types | Count |
|---|---|
| 1 | 11 |
| 2 | 1 |
| 3 | 1 |
| 4 | 1 |
| 5 | 2 |
| 6 | 2 |
| 7 | 2 |
| 8 | 1 |
| 9 | 1 |
| **Total** | **22** |

*Figure 7.27. Examples of various pubic skirts: (from left) type 1(I30030:59:2); type 1 (I10063:41:1); type 1(I30030:60:1); type 2 (I30091:24:2); type 3 (I10024:27:5); type 4 (I10049:35:1); Row two: type 5 (I1:0049:35:2); type 6 (R10015:49:1); type 7(I3:0030:56:1); type 8 (I10046:74:1); type 9 (I10113:85:1) (not to scale).*

Unlike headdresses that were recorded with almost all Dynamic Figures, pubic skirts were rarer. The MCA plot below compares the presences of a pubic skirt and arm and leg musculature forms and illustrates that the more detailed and defined Dynamic Figures were more likely to have a pubic skirt than the less detailed and defined Dynamic Figures (Figure 7.28).

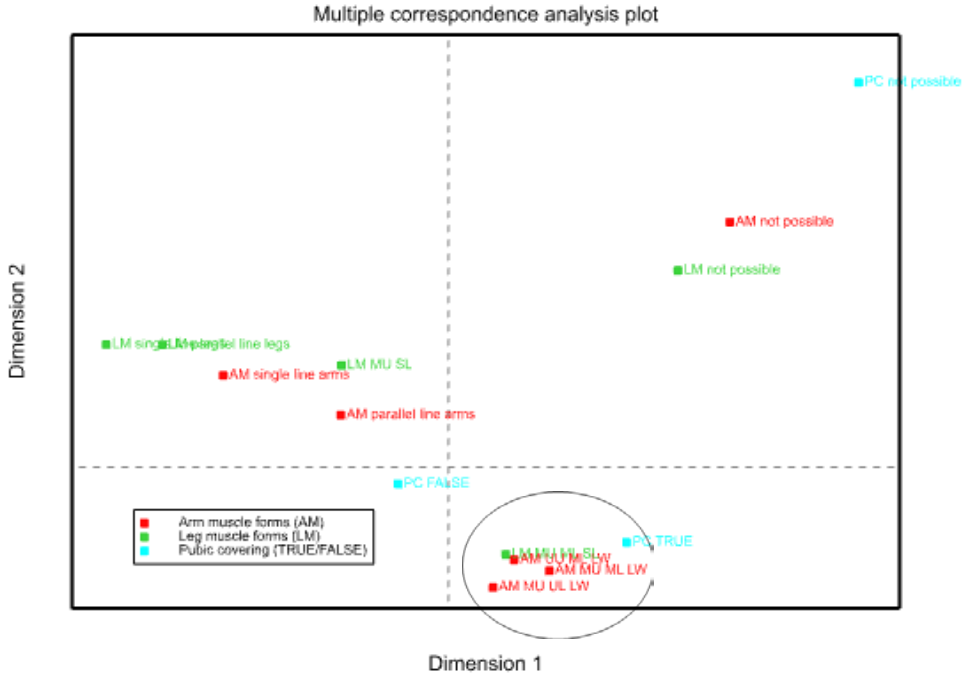



*Figure 7.28. MCA plot of the presences of a pubic skirt and arm and leg musculature forms. Key: UA, MA, LW undefined upper arm, muscular lower arm, single line wrists; MA, UL, LW muscular upper arm and single line lower arms; MA, ML, LW upper arm muscles, forearm muscles and single line wrists; MU, ML, SL upper leg muscles, lower leg muscles and single line ankle; MU, SL upper leg muscles, single line lower leg.*

### 7.10. Size of Dynamic Figure motifs

In Johnston et al. 2017, we demonstrated that metric measurements (i.e. motif size) was poor for determining types (or phases) within Dynamic Figure art, as artists purposefully produced larger and smaller motifs within single scenes as part of their narrative messages. More recently, surveys in northwest Arnhem Land have recorded further instances of artists using the size of motifs as part of the narrative within scenes (see Jalandoni et al. 2018). Therefore, using a metric measurement to analyse the Dynamic Figure types presented in this thesis would be problematic.

However, metric analysis can investigate size consistencies in depictions of Dynamic Figure art. The consistency of depiction is to a lesser extent an aspect of Dynamic Figure art's formalism and broad adherence to artistic realism, meaning artists tried to paint motifs proportionally. Table 7.21 shows the metric data of 74 motifs, these were selected as each motif could be recorded in full detail and wore a headdress. This excluded therianthropes and female motifs as they did not have headdresses. Table 7.21 shows that that coefficient of variation of each of motif's body and limb measurements was similar, demonstrating that on average the length of motif's arm increased proportionally to its body or leg length. However, the headdress height had a larger coefficient of variation compared to the limbs of the body; this measurement had more deviation from the average. Therefore, if an artist chose to proportionally increase or decrease the size of a motif's limbs they did not necessarily increase or decrease the size of the headdress in the same way. This suggests that artists chose to paint a specific headdress upon a motif despite its size, instead of choosing smaller headdress types for smaller figures and vice versa. It follows that artist intended to depict specific headdresses within a scene regardless of the size of the motifs they painted. This highlights the significance of headdresses in Dynamic Figure art.

**Table 7.21 Collation of the metric measurements of Dynamic Figure motifs**

| | **Body (groin to neck)** | **Arm forward** | **Arm backward** | **Leg forward** | **Leg backward** | **Headdress height** |
|---|---|---|---|---|---|---|
| **Mean** | 12.97 | 19.97 | 20.07 | 20.35 | 19.48 | 11.58 |
| **Standard deviation** | 6.26 | 9.14 | 9.07 | 8.79 | 7.97 | 7.14 |
| **Coefficient of variation** | 48% | 46% | 45% | 43% | 41% | 62% |

This contention is also supported by multiple regression analysis (MRA) of the body measurements. Table 7.22 shows the results of the multiple regression analysis upon the same set of 74 motifs. It illustrates that the arm forward and leg forward measurements have a highly significant relationship with the body measurement. This relationship is such that a 0.01 cm increase of body measurements equates to an arm forward and leg forward measurements increase of 0.291 cm and 0.172 cm respectively. The arm backward and leg backward were found not to have a significant relationship with the body measurement. Potentially, certain poses, such as the full power swing which were only observed of the backward arm, resulted in less consistent variation within its length.

**Table 7.22. Multiple regression analysis of body measurements**

| **Terms** | **Estimates (s.e)** | **Wald test statistic** | **df** | **P-value** |
|---|---|---|---|---|
| **Accepted** | | | | |
| **Arm forward** | 0.291 (0.12) | 4.256 | 1 | <0.001 |
| **Leg forward** | 0.172 (0.14) | 2.008 | 1 | 0.001 |
| **Rejected** | | | | |
| **Arm backward** | -0.005 (0.15) | 0.001 | 1 | 0.101 |
| **Leg backward** | 0.096 (0.129) | 0.556 | 1 | 0.974 |

In comparison, Table 7.23 is the MRA of the headdress measurement compared to the body and limb measurements. This table shows the P value for each measurement and indicates that they do not have a significant relationship with the headdress length. Therefore, headdress length would be a poor predictor of other measurements. Unlike body and limb length, headdress length does not adhere to the proportion conventions of the rest of a motif.

**Table 7.23. Multiple regression analysis of headdress measurements**

| **Terms** | **Estimates(s.e)** | **Wald test statistic** | **df** | **P-value** |
|---|---|---|---|---|
| **Rejected** | | | | |
| **Combined arm(forward)** | 0.224 (0.291) | 0.5899 | 1 | 0.445 |
| **Combined arm(backward)** | 0.001 (0.298) | 0.0000 | 1 | 0.996 |
| **Combined leg(forward)** | 0.231 (0.253) | 0.8384 | 1 | 0.363 |
| **Combined leg(backward)** | 0.171 (0.261) | 0.4323 | 1 | 0.513 |
| **Body** | -0.114 (0.195) | 0.3452 | | 0.559 |

In short, artists painted Dynamic Figure motifs in a realistic form, where body and limb measurement had a proportional relationship. However, this did not apply to headdresses, as artists painted their length dependent upon the specific headdresses they intended to paint within a Dynamic Figure scene.

### 7.11. Conclusion

This chapter has presented evidence that two distinct types of Dynamic Figures exist in the rock art of Jabiluka, a more defined type and a less defined type. Although, the assemblage is broadly homogenous, as some Dynamic Figure motifs had a combination of the attributes of both the defined and less defined Dynamic Figure types. The formal attributes that defined these types were the arm and leg musculature forms and to a lesser extent the various neck, arm and feet types. The two Dynamic Figure types did not have their own material culture assemblages; although pubic skirts were more likely to be recorded upon the more defined Dynamic Figures. In summary, I have demonstrated that through observation and typological analysis, as well as MCA, a Dynamic Figure style exists in Jabiluka, I discuss this further in Chapter 9.

I also presented an overview and comparison of the material culture of Dynamic Figure art. This analysis demonstrated the dominance, variation and frequency of worn material culture compared to carried material culture; that is, adornments compared to weapons. The frequency of headdresses and head adornments compared to all other material culture types is particularly indicative of ritual practice (see Chapter 9). Moreover, the material culture most used during ethnographically recorded ritual performances, dancing skirts and headdresses, exhibited more types than any other material culture object in Jabiluka. The variation of headdresses and head adornments is indicative of an efficient ritual messaging system within Dynamic Figure scenes, as information can be signalled and associated with each motif, via its headdress. This contention is explored in Chapter 9. The next chapter focuses upon how these Dynamic Figure motifs were painted in Dynamic Scenes.

# Chapter 8: Dynamic Scenes

> *The graphic connection in the composition is achieved by careful, intentional overlapping: the weapon of one figure may cross, or just touch, the body or implement of another figure. This is done without obscuring any important part or feature of that figure. The second and more important theme is of ritual or mytho-totemic nature.*
>
> Eric Brandl (1988:172).

## 8.1 Introduction

Dynamic Figure scenes are the earliest examples of complex narrative compositions in the rock art of western Arnhem Land. While, earlier rock art remains, it consists of static fauna, depicted in isolation, and absent of many of the formal artistic accomplishments of Dynamic Figure scenes (Chaloupka 1993a:106). As the core of Dynamic Figure art are human figures, as archaeologists, we are able to examine not just the presence of material culture but how people used it in their ritual practice and gain insights into how ritual permeated people's lives.

I define scenes as one or more Dynamic Figure motifs depicted in action where the artists have implied a sense of space and time (e.g., Dobrez 2011:75, 82-83). Dynamic Figures are always depicted in action, and even a single motif is often in motion and composed in the act of doing something; therefore, a scene can consist of one human figure (Section 4.5 and Section 5.4; cf. May and Domingo Sanz 2010:37; May et al. 2017a; see also Dawson 1994; Domingo Sanz 2011). While this definition of a scene was significant in the discussion of Dynamic Places, it is as significant in this discussion of Dynamic scenes, as one Dynamic Figure motif can tell us so much about the past (see Section 8.2; Chapter 9). In this chapter, I present evidence that by analysing Dynamic Figure scenes and aspects of the messages they convey to observers (e.g., Layton 1992:1) we can develop an understanding of past ritual behavior in this region.

The narrative attributes and scenes of Dynamic Figure art supports the contention that Dynamic Figure art was intended to convey messages to observers (see Chapter 1; Layton 1992:1; Ross 2003 14). However, rock art should not simply be viewed as 'street signs' painted by people in the past to direct their contemporaries and decedents

(Clegg 1977a, 1993), nor should it be interpreted as idle painting for art's sake (cf. Halverson 1987). Tamisari and Wallace (2006) highlighted the complexity and meanings behind iconography within Aboriginal cultural in their examination of djalkiri (foot prints) within Yolngu society in north-east Arnhem Land. They argued that djalkiri '…refers to the correct manner of doing things, taught to humans for hunting, foraging, processing of food, the making of tools, or the performance of the paintings, songs and dances associated with these practices' (Tamisari and Wallace 2006:219). At the same, Morphy (1999) argued that it is the individual that allow this meaning to be communicated and received through art, as meaning is connected to their understanding of the world (see also Taylor 1996). Within Dynamic Figure art certain attributes indicate that artists understood, even intended, that their images would be part of an iconography system and their messages would be seen by future artists and likely non-artists observers; therefore, they most likely understood that communication would take place through their art (e.g., Layton 1992:1; Wobst 1977). These attributes are: (1) specifically painting in Dynamic Places and on the same panels as other Dynamic Figure artists (see Chapter 6). This demonstrates a conscious choice by artists to maintain an artistic tradition that places Dynamic Figure scenes in places where they would be seen by other people. (2) Repeated scenes and headdresses indicate that artists either chose to reproduce motifs and scenes that they had observed on rock walls, or they painted scenes that they had observed in real life and chose to paint those scenes in a similar manner to artists before them, in adherence to a Dynamic Figure style (see Chapter 7 and Chapter 9). However, this does not diminish the performative act or the artists personal meaning when they painted Dynamic Figure art, it is simply that that communication appears to be integral to Dynamic Figure art production. In this way, Dynamic Figure art may have had both inward and outward communication intentions and I argue that my analysis suggests that one of the more significant intentions was to convey ritual messages.

The ability for something, rock art, a performance, etc., to convey massages is a pivotal ritual indicator and it is the different narrative attributes contained within Dynamic Figure art that is a focus of my analysis to consider ritual messages. In particular, I focus on a key feature of most Dynamic Figure scenes — the depiction of diverse headdresses. Headdresses are strongly associated with ritual practice in northern Australia (see Berndt 1951a:170; Chaloupka 1993a:110; Warner 1958:497-498) and are the most prolific and diverse material culture object in Dynamic Figure art (see Chapter 7). I argue, that in Dynamic Figure scenes, headdresses form one of the key mechanisms

to convey ritual messages (Chapter 9; see also Johnston 2017). In this chapter, I also explore other attributes of Dynamic Figure scenes including depictions of fauna and hand and object stencils. In Jabiluka, I found that artists imbued a narrative significance for various fauna, especially macropods, which contributed to their ritual messages. The examination of scenes also enabled a reconsideration of the association between hand and object stencils and Dynamic Figure art as the systematic recording of Jabiluka has shed new light on this association (see Section 3.11).

This chapter essentially illustrates that various messages were embedded in Dynamic Figure art and that ritual information was exchanged in these narrative compositions. This investigation is only possible because of the detailed and concise narrative composition Dynamic Figure artists employed in the scenes they depicted.

### 8.2. Dynamic Figure scenes

The Dynamic Figure scenes of Jabiluka are narratives that depict a range of activities. Certain scenes have many attributes and indicators of their narrative: the *action indicators* (Section 8.5), the placement of motifs in relation to each other, various material culture objects and, not least, the activity motifs are depicted undertaking. Some activities can be easily interpreted, such as throwing a spear or touching another motif's feet; while others are ambiguous, such as motifs 'in motion with or without weapons'. In the latter case, other attributes of the scene help to contextualize the activities and interpretation.

Table 8.1 is a count of how many Dynamic Figure motifs were in a scene. For instance, 23% (n=22) of scenes contained two motifs and 4% (n=4) of scenes contained six motifs. This illustrates that about 58% (n=56) of scenes have more than one motif, while 42% (n=41) have only one. This count includes partial motifs that could not be recorded in detail but were identified as Dynamic Figure human figures and therianthropes; however, it does not include fauna or their tracks.

**Table 8.1. Count of Dynamic Figure motifs per scene**

| Motifs per scene | Count |
|---|---|
| 1 | 41 (42%) |
| 2 | 22 (23%) |
| 4 | 13 (13%) |
| 3 | 8 (8%) |
| 5 | 5 (5%) |
| 6 | 4 (4%) |
| 8 | 2 (2%) |
| 9 | 1 (1%) |
| 11 | 1 (1%) |
| **Total** | **97** |

### 8.2.1 Scene activity interpretations

Following Chapter 4, scenes are not interpreted to establish a meaning behind them but to explore, describe and discuss what is depicted. For instance, a scene that depicts sexual intercourse, defined as a female motif and a motif wearing a headdress superimposed over one another, is not interpreted as *about* sexual intercourse but as an instance where an artists has chosen to depict this activity to convey their message — this scene is almost certainly *about* many things. Similarly, a motif throwing a spear is most likely *about* more that the act of throwing a spear. Scene interpretations are employed to discuss and explore the types of activities Dynamic Figure artists painted and how these may indicate aspects of ritual practice in Dynamic Figure art.

To illustrate this approach, I have chosen a scene consisting of a single motif (Figure 8.1). In this scene, a human figure wears a large headdress and is sitting with its legs crossed and its arms reaching towards the ground, in front of it are a pair two-toed macropod tracks or feet. This scene was classified as sitting, as that is the activity that the artists depicted the motif conducting. Further interpretation is possible and it is explored in the discussion chapters, but in this results chapter the interpretations focus upon descriptive categories. In the discussion chapters, further information, as well as historical ethnographic records, is considered to expand the interpretation. For example, the artists may have been depicting part of a ritual performance involving the feet of this animal or the human figure is painting, engraving or drawing track motifs in the sand or on a rock surface. The latter is reminiscent of ritual performances conducted by men in central Australia (see AIATSIS EDWARDS.R01.CS). This scene could be a vignette of larger ritual performance; however, what is depicted is sitting. This example highlights how scenes can be used to discuss what people depicted without focusing on what the

scenes are *about.* Figure 8.1 also highlights the level of detail and information contained in a Dynamic Figure scene with a single motif.

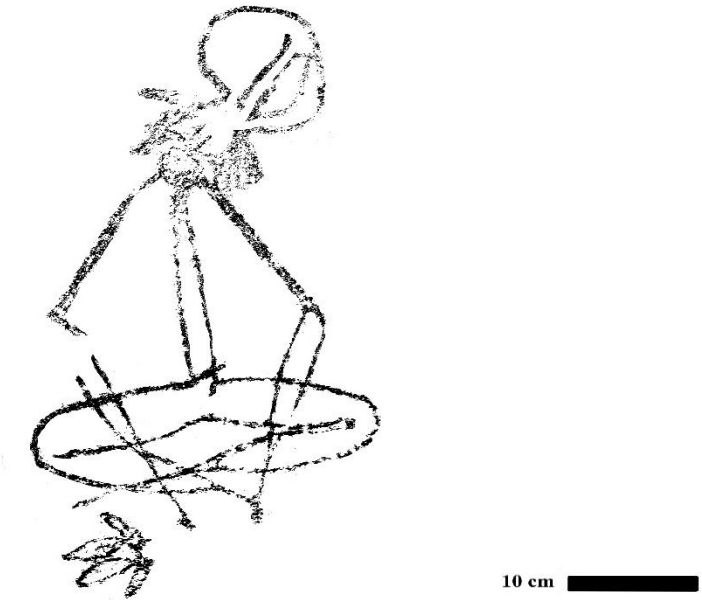



*Figure 8.1. Traced reproduction of I30030:57:1, showing a motif and macropod tracks or foot prints.*

Table 8.2 shows the number of scenes and motifs according to each interpreted scene type. In Table 8.2, descriptions of each category are provided but some need further clarification. The 'in motion (with weapons)' category consists one or more motifs depicted moving while facing the same direction and while carrying weapons. Headdresses, hair belts or dilly bags are not classified as weapons. The 'in motion (without weapons)' category consists one or more motifs depicted moving while facing the same direction. No scenes recorded had a motif 'in motion' with only a dilly bag. The 'complex activity' category consists of a few different scene compositions but their overarching theme is that of the performance attribute of ritual practice (see Section 4.4). Scenes in this category involve human figures interacting with a therianthrope(s), motifs arranged in a manner consistent with dancing, that is, facing the same direction and performing a similar action, and when motifs are depicted in detail or overtly conducting a ceremonial activity such as scarification or body painting with clear ethnographic parallels (e.g., Figure 3.8; see also May et al. 2017a).

**Table 8.2. Count of interpreted Dynamic Figure scenes and number of motifs per scene**

| Interpretation | Description of category | Count of Activity | Count of motifs per activity |
|---|---|---|---|
| In motion (with weapons) | Motifs depicted in motion and carrying a weapon: spear, boomerang, hafted lithic or club. | 35 (36%) | 86 (35%) |
| Stationary | Motifs depicted not in motion with their legs close together. | 16 (16%) | 28 (12%) |
| Complex activity | Motifs depicted in action related to ceremony: dancing, formally arranged in performance, motifs interacting with therianthropes. | 15 (15%) | 63 (26%) |
| In motion (without weapons) | Motifs depicted in motion without a weapon. | 15 (15%) | 24 (10%) |
| Hunting | Motifs depicted in motion interacting with fauna. | 4 (4%) | 6 (2%) |
| Tracking | Motifs depicted in motion and following or facing tracks. | 4 (4%) | 15 (6%) |
| Not possible | Scenes too poorly preserved to interpret any narrative activity. | 2 (2%) | 5 (2%) |
| Sexual intercourse | Female motif(s) superimposed with another motif(s). | 2 (2%) | 4 (2%) |
| Sitting | Motifs depicted with squatted cross legs | 2 (2%) | 3 (1%) |
| Camp scene | Motifs composed in relation to a fire symbol(s). | 1 (1%) | 6 (2%) |
| Violent interaction | Motifs depicted spearing or attacking another motif. | 1 (1%) | 6 (2%) |
| Total | | 97 | 246 |

Two types of scenes only occurred once in the Jabiluka (‘camp’ and ‘violent interaction’ scenes), yet very similar scenes have been recorded elsewhere in western Arnhem Land (Lewis 1988:186, Figure 32, Lewis 1988:179, Figure 25 respectively; see also Chapter 9). Other scenes were recorded on few occasions: ‘sexual intercourse’, ‘hunting’, ‘sitting’ and ‘tracking’, all between 2 and 4 instances. The most common scene depicted was ‘in motion (with weapons)’ (36%, n=35). ‘Stationary’ (16%, n=16), ‘in motion (without weapons)’ (15%, n=15) and ‘complex activity’ (15%, n=15) were the next most frequently depicted scene categories. The number of motifs per scene mostly reflected the frequency of each scene type except for ‘complex activity’; where the percentage of motifs was higher than the frequency of that scene type occurring (Table 8.2). To clarify, while ‘complex activity’ only made up 15% (n=15) of scenes, 26% (n=63) of Dynamic Figure motifs in Jabiluka were engaged in ‘complex activities’. This compares with ‘in motion (with weapons)’ which is 36% (n=35) of scenes and

accounts for 35% (n=86) of motifs or ‘stationary’ which is 16% (n=16%) of scenes and accounts for 12% (n=28) of motifs. Therefore, scenes with many motifs were more likely to depict a ‘complex activity’ compared to other scene activity types.

As noted, the categories are interpretations of the identifiable narrative elements depicted within a scene and not what a scene is about or the message(s) it conveys to observers. Here, complexity refers to the number of identifiable narrative elements within a scene and not the complexity of the messages a scene may convey.

### 8.2.2 Scene activity interpretations compared to Dynamic Figure types

Figure 8.2 is an MCA plot comparing the interpreted activity with the Dynamic Figure types, defined by their leg and arm muscles, discussed in Chapter 7. This plot compares if the Dynamic Figure types are more associated with certain activities. The rarity of certain activities must be considered in this MCA plot, as although a Dynamic Figure type may group closely with a scene category if there a few examples this is not overly significant. As well, the association between therianthropes (single line arms and legs) and ‘complex activity’ is a result of the parameters of that activities defintion. However, the association between the less detailed Dynamic Figure form and ‘in motion (without weapons)’ and ‘stationary’ is significant. It is possible that artists who were less accomplished painters or who chose to spend less time painting also spent less time depicting scenes which required more detail and narrative attributes, i.e. complex activities. The more detailed Dynamic Figure form was associated with ‘in motion (with weapons)’ and more closely associated with ‘complex activities’. However, this is only an association and the less detailed Dynamic Figures were also depicted conducting ‘complex activities’. The other activities were recorded on too few occasions to warrant meaningful interpretation through MCA.

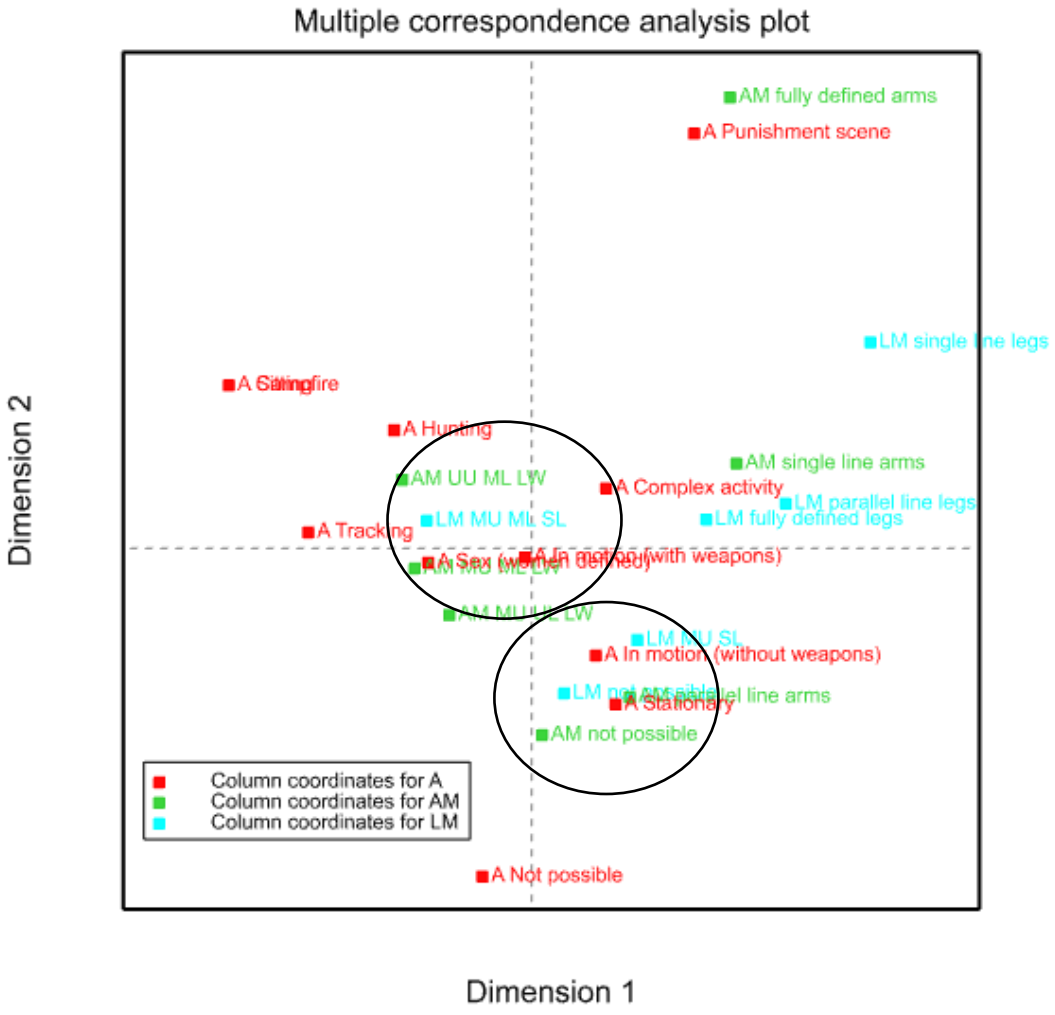



*Figure 8.2. MCA plot of the activity, leg muscle and arm muscles form of the Jabiluka Dynamic Figures. Key: UU ML LW undefined upper arm, muscular lower arm, single line wrists; MU, UL, LW muscular upper arm and single line lower arms; MU, ML, LW upper arm muscles, forearm muscles and single line wrists.*

This section has demonstrated that a range of messages, activity types, are associated with Dynamic Figure art, which suggests that at the very least Dynamic Figure art can and did convey a range of different messages to its observers. The range of activities, from ambiguous to very complex and specific, demonstrate the ability of Dynamic Figure art to convey specific messages to observers. Although, no association could be made between Dynamic Figure types and headdress types (see Chapter 7), it appears that the more detailed Dynamic Figure type was more often associated with scenes depicting more 'complex activities'.

### 8.3. Headdresses and invariance in Dynamic Figure art scenes

In each scene, I recorded if the motifs wore the same (invariant) headdresses or if there were a range (variant) of headdresses depicted upon the motifs. This is an important consideration — as in some scenes contextual information about the relationships between the motifs is conveyed through differences between headdresses (see Johnston 2017; Chapter 9). Table 8.3 is a count of the whether scenes contained invariant or variant headdresses. In this table, not applicable consists of scenes with only one motif, where this test cannot be conducted. Similar proportions of scenes were recorded with the same or very similar headdresses (invariant) and distinctly variant headdresses. Figure 8.3 are examples of scenes with variant and invariant headdresses.

**Table 8.3. Dynamic Figure scenes with headdress invariance**

| Labels | Count |
|---|---|
| Not applicable | 42 (42%) |
| Invariant | 23 (24%) |
| Variant | 18 (19%) |
| Not possible | 14 (14%) |
| **Total** | **97** |

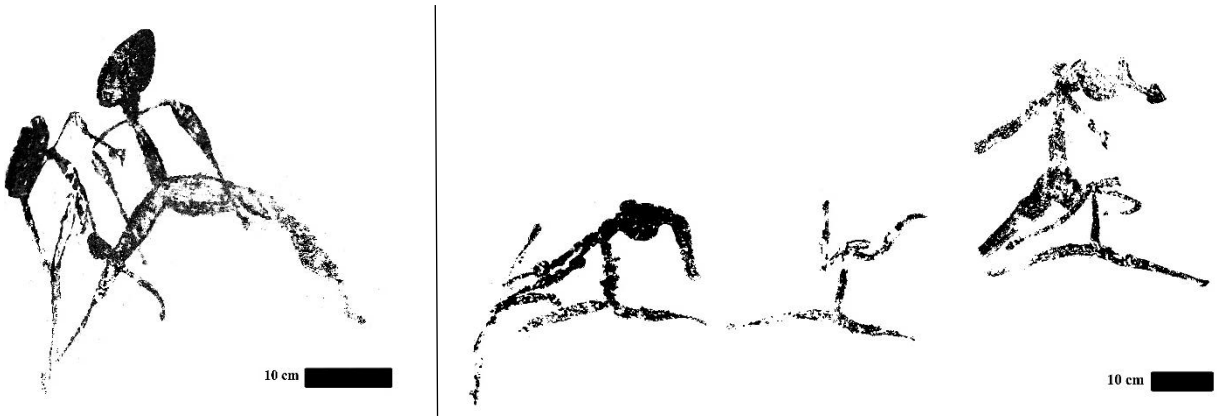



*Figure 8.3. Examples of scenes with invariant (left) and variant (right) headdresses, I20113:22 and I30183:46 (respectively).*

To explore invariant and variant headdresses further, I examined whether certain activities were more likely to have an invariant or variant collection of headdresses. Table 8.4 is a count of each scene type compared to if it contained motifs with invariant or variant headdresses. The activities were mostly evenly split, however, 'in motion (with weapons)' had twice (n=10) as many scenes containing invariant headdresses than variant. The other scene activities did not have enough recorded examples to have meaningful information drawn from them.

**Table 8.4. Dynamic Figure motif headdress invariance by scene activity**

| Labels | Not applicable | Invariant | Variant | Not possible | Total |
|---|---|---|---|---|---|
| Campfire | | | 1 (4%,100%) | | **1** |
| Complex activity | 1(2%,7%) | 5 (28%,33%) | 7 (30%,47%) | 2 (14%,13%) | **15** |
| Hunting | 2 (5%,50%) | | | 2 (14%,50%) | **4** |
| Not possible | | | | 2 (14%,100%) | **2** |
| Punishment | | | 1 (4%, 100%) | | **1** |
| In motion (with weapons) | 14 (33%,40%) | 10 (56%,29%) | 5 (22%,14%) | 6 (43%,17%) | **35** |
| In motion (without weapons) | 13 (31%,87%) | | 2 (9%,13%) | | **15** |
| Sexual intercourse | | | 2 (9%,100%) | | **2** |
| Sitting | 1 (2%,50%) | 1 (6%,50%) | | | **2** |
| Stationary | 10 (24%,63%) | 1 (6%,6%) | 4 (17%,25%) | 1 (7%,25%) | **16** |
| Tracking | 1 (2%,25%) | 1 (6%,25%) | 1 (4%,25%) | 1 (7%,25%) | **4** |
| **Total** | **42** | **18** | **23** | **14** | **97** |

(a%, b% - 'a' represent % of headdress variance, 'b' represents % of scene type)

'In motion (without weapons)' was the other significant result of Table 8.4, as it demonstrated how often these scenes involved only one motif, as 'not applicable' results (n=13) on this table represents scenes with one motif. Similarly, stationary had twice the number of scenes with a single motif as scenes with two or more motifs.

This comparison of headdress variance and invariance and scene interpretation demonstrates that Dynamic Figure artists did not paint the same combinations of headdresses with each specific scene activity. That is, one 'in motion (with weapons)' scene may have had invariant headdresses while another 'in motion (with weapons') scene may have had variant headdresses. Although, some scene types were more likely to contain variant or invariant headdresses, such as 'in motion (without weapons)'. This suggests that while similar activities can be depicted they are not necessarily *about* the same thing or intended to convey the same message. Dynamic Figure artists likely used similar scene activity types to depict different information depending on the messages they intended to communicate. This is important for examining invariant scenes and motifs in Chapter 9.

To further investigate headdress invariance, I examined which types of headdresses were depicted together in Dynamic Figure scenes. Table 8.5 shows which headdresses were recorded together in a scene and on how many occasions (Figure 8.4; see also Section 7.8). Few combinations were recorded on more than one occasion, except oval and no headdresses (n=6). These were often scenes with a female motif and a non-sexed

motif with a headdress. As oval type headdresses were the most recorded headdress type, it could be expected that they were the most recorded in combination with other headdress types (n=15).

**Table 8.5. Dynamic Figure motif headdress combinations per scene**

| Labels | Count of headdress types |
|---|---|
| Oval, no headdress | 6 (26%) |
| Fan, no headdress | 2 (9%) |
| Oval, tassel | 2 (9%) |
| Tassel, tube with lines emanating from the end | 2 (9%) |
| Circle with tassels, rectangle | 1 (4%) |
| Oval, circle | 1 (4%) |
| Oval, hook, unique | 1 (4%) |
| Oval, rectangle | 1 (4%) |
| Oval, rectangle, leaf | 1 (4%) |
| Oval, rectangle, tube with lines emanating from the end | 1 (4%) |
| Oval, tassel, circle | 1 (4%) |
| Oval, tube with lines emanating from the end | 1 (4%) |
| Tassel, circle with tassel, rectangle | 1 (4%) |
| No headdress (unsexed), no headdress (female) | 1 (4%) |
| **Total** | **23** |

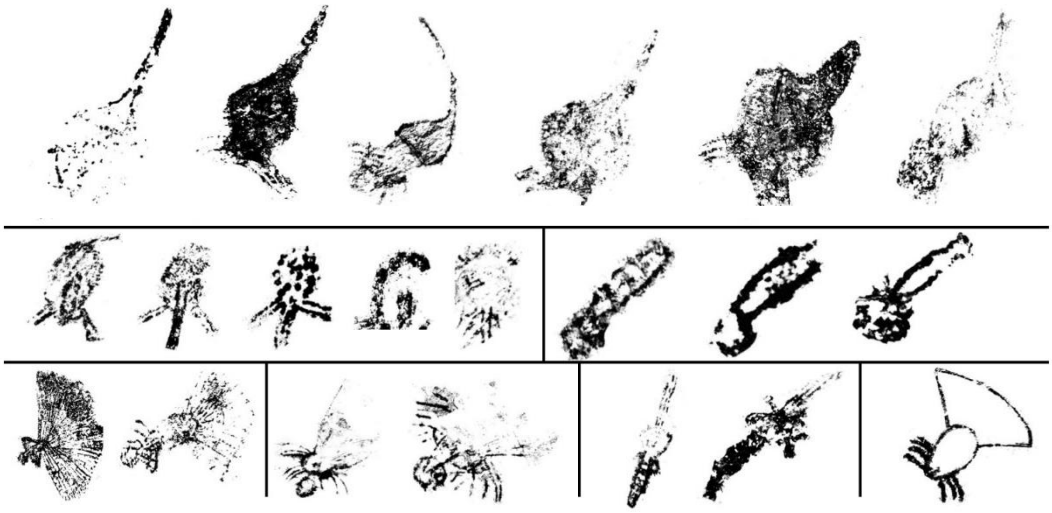


*Figure 8.4. Examples of various headdress types highlighting the distinct variation possible within scenes (not to scale).*

To even further investigate headdress variance, I examined which types of headdresses were more often depicted upon every motif in a single scene. Table 8.6 shows a count of how often two or more motifs wore the same headdress type in one scene (Figure 8.7; see also Section 7.8). For instance, in one scene each motif wore a hooked headdress and in twelve (67% of this sample) scenes each motif wore an oval headdress. As above, oval was the most recorded headdress type and it was not surprising that oval headdresses were the most recorded in this table.

**Table 8.6. Headdress types recorded upon multiple motifs in one scene**

| **Labels** | **Count of headdress types** |
|---|---|
| Oval | 12 (67%) |
| Tassel | 2 (11%) |
| Fuzzy short | 1 (6%) |
| Hooked | 1 (6%) |
| Three circles | 1 (6%) |
| Triangular | 1 (6%) |
| **Total** | **18** |

*Figure 8.5. Reproduction of scene I30030:60 an example of invariant headdresses (no scale included).*

Finally, I examined what headdress types were depicted in scenes with only one motif. Table 8.7 shows the headdresses recorded in scenes with a single motif, where the range of headdress categories was 'not applicable' in Table 8.4. This table shows that oval was the most recorded headdress in this sample. Of note are tassel headdresses, despite being the second most recorded headdress type, were only recorded on two (6%) occasions in one motif scenes. Therefore, tassel headdresses were often recorded in scenes with more than one motifs (n=8).

**Table 8.7. Headdress types recorded in single motif scenes**

| **Labels** | **Count of headdress types** |
|---|---|
| Oval | 19 (58%) |
| Unique | 3 (9%) |
| Leaf | 2 (6%) |
| Tassel | 2 (6%) |
| Tube with lines emanating from the end | 2 (6%) |
| Circle | 1 (3%) |
| Circle with tassels | 1 (3%) |
| Fuzzy short | 1 (3%) |
| No headdress | 1 (3%) |
| Tube with tassel | 1 (3%) |
| **Total** | **33** |

No overarching relationships were established between headdress invariance, variance and scene activity types. This analysis has observed some associations: such as, 'in motion (without weapons)' scenes often had only one motif while tassel headdresses were less likely to be depicted in single motif scenes. Further data may be required to expand this discussion, but it is also likely that the subtlety of headdress depiction is not accessible to archaeologists. This section also provided evidence that headdress invariance and variance was employed in various combinations in all the scene activities types in order to convey messages.

### 8.4. Fauna in Dynamic Figure scenes

A minority of scenes contain Dynamic Figure motifs interacting with animals and/or tracks, in total 15 (15%) were recorded (Table 8.8). One scene I10046:75 appears to contain emu tracks and one single toe macropod track; however, the weathering of this panel made it hard to determine if this was a single large scene or two scenes overlapping one another. Scenes containing tracks were one third (33%) of all scenes associated with fauna. Figure 8.6 are examples of track types depicted in Jabiluka.

**Table 8.8. Fauna and tracks depicted with Dynamic Figure motifs**

| Label | Motif elements | Scenes |
|---|---|---|
| Emu track (3 toe) | 10 (29%) | 1 (7%) |
| Macropod | 9 (26%) | 4 (27%) |
| Macropod track (1 toe) | 7 (21%) | 3 (20%) |
| Macropod track (2 toe) | 2 (6%) | 1 (7%) |
| Snake | 2 (6%) | 2 (13%) |
| Thylacine | 2 (6%) | 2 (13%) |
| Echidna | 1 (3%) | 1 (7%) |
| Emu | 1 (3%) | 1 (7%) |
| **Total** | **34** | **15** |


*Figure 8.6. Traced reproduction of one and three toed tracks or foot prints from scene I10046:75.*

In scenes containing macropods often the sex of the animal was depicted. In I10039:31 one of the macropods was male, testicles depicted, and another is likely male but too poorly weather to be positively identified. In scene I20183:66 two macropods are clearly male, two likely females with pouches depicted, and the fifth, which is the smallest appears female with a pouch, although it was also hard to determine (see Figure 8.7). The macropod in I30030:53 was too poorly preserved to determine its sex.

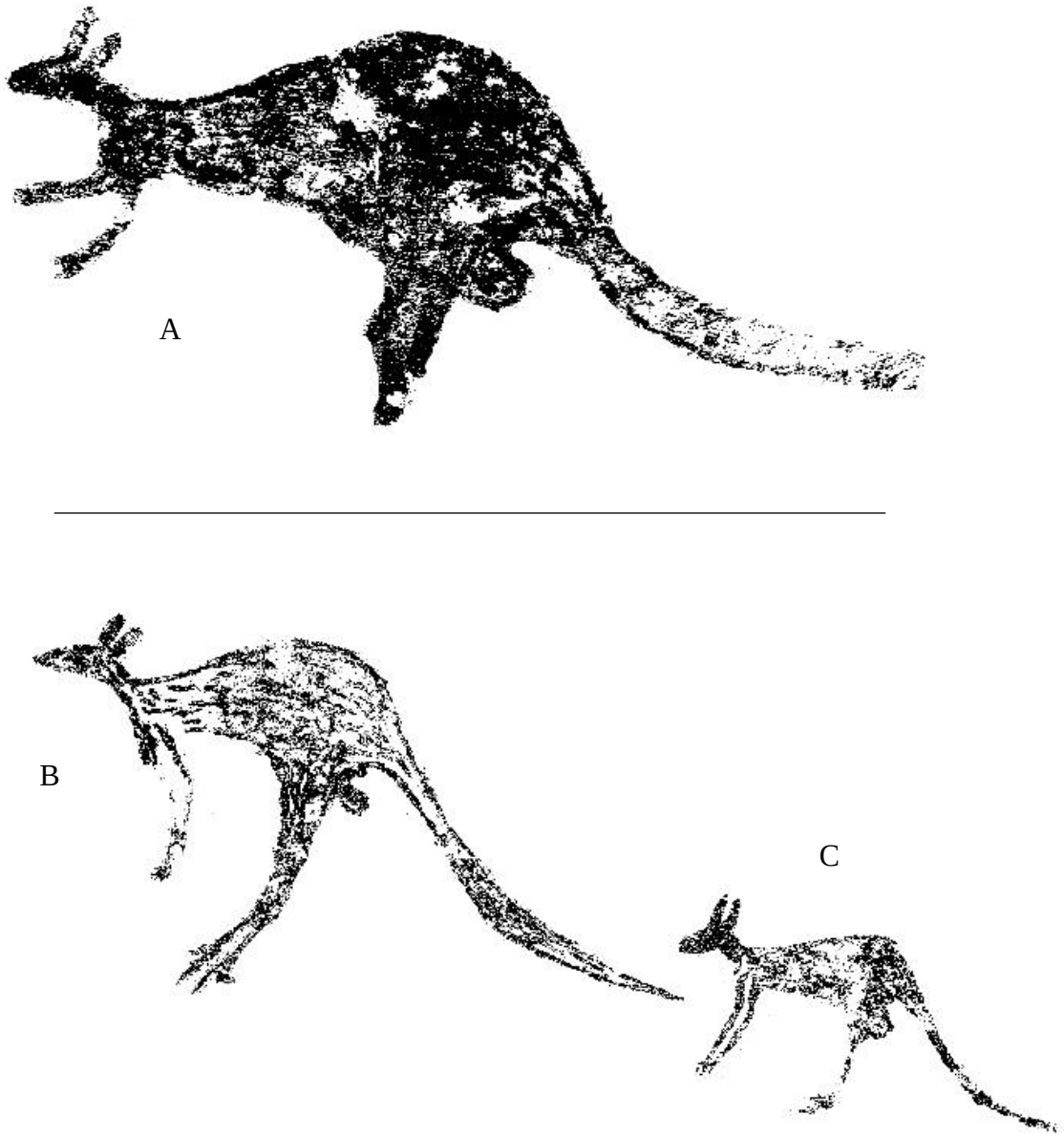



*Figure 8.7. Traced reproduction of macropods from scene I20183:66, showing pouches (A and C) and testicles (B) (not to scale).*

The decision to depict the sex of macropods is significant for this study as it suggests that macropod motifs are significant to the narrative scenes in which they are depicted. An artist illustrating a macropod's sex further indicates the conscious choices artists are making in their art production. In short, the demarcation between macropods in these scenes was required for forming the narrative composition of Dynamic Figure scenes. This choice further indicates that the artist had a distinct message that they intended to convey to observers, most likely more than person hunts kangaroo. In Aboriginal mythology, animals, humans and spiritual beings often take and transform between physical forms, so a kangaroo maybe a man and a kangaroo during one story (see Taçon and Chippindale 2001a; Tamisari and Wallace 2006:215)

### 8.5. Scene action indicators

Scene action indicators are a prominent feature of Dynamic Figure art (see Chapter 3). They consist of dashes, lines, dots and tracks and are used in Dynamic Figure art to inform the narrative within the scene (Figure 8.8; see also Chippindale and Taçon 1993; Taçon and Chippindale 2001a).

*Figure 8.8. The famous emu hunter panel from site R10031 at Djidbidjidbi, note the various scene action indicators including dots from the motif's hand, following the spear and coming from the emu's mouth.*

Scene action indicators were recorded in 17 (18%) scenes (Table 8.9). Following the methodology outlined in Chapter 4, I have not attempted to interpret the exact nature of each action indicator but describe how and when they occur. No distinction was made between a dash (-) or a dot (·).

**Table 8.9. Scene action indicators depicted with Dynamic Figure motifs**

| Labels | Types | Descriptions | Count indicators |
|---|---|---|---|
| Visible action indicators | | Asterisks | 2 (12%) |
| | | Tracks | 4 (24%) |
| | | Tracks, and dots emanating from Dynamic Figure's neck and head | 1 (6%) |
| Invisible action indicators | Possible verbal communication | Dots emanating from therianthrope's mouth, and around the Dynamic Figures | 1 (6%) |
| | | Dots emanating from therianthrope's mouth | 3 (18%) |
| | | Dots emanating from Dynamic Figure's mouth | 2 (12%) |
| | Narrative indicators | Dots across the Dynamic Figure's body | 1 (6%) |
| | | Dots around the Dynamic Figure's body | 1 (6%) |
| | | Dots emanating from Dynamic Figure's body and neck | 1 (6%) |
| | | Dots emanating from Dynamic Figure's neck and head | 1 (6%) |
| **Total** | | | **17** |

*Note: The shaded cells indicate that in these scenes the action indicator may be either a visible or invisible indicators.*

To explore these scene action indicators further, they were categorised as either visible or invisible and grouped by the type of motif they were associated with in a scene. Visible indicators consisted of tracks (n=5), a design that looks like asterisks (n=2) and a further scene which has dots around a motif's body which may represent blood or sweat; alternatively, it may be a non-visual indictor within that scene (Figure 8.9). Previously, the asterisk symbol has been interpreted as a camp fire (e.g., Chaloupka 1988:301-302; Lewis 1988:175, Figure 21). The two scenes with asterisks in Jabiluka are associated with motifs that are interpreted as lying around the symbol and are similar to the other camp scenes in western Arnhem Land (Lewis 1988:175, Figure 21). These scenes support the interpretation that these symbols are indicators of camp fires. As noted in Table 8.8, three types of tracks were recorded three, two and one toe, interpreted as an emu and macropods respectively.


*Figure 8.9. Traced reproduction of scene I10049:35, showing dashes from the therianthropes mouth (top right) and dots around the motifs body which could be a visible or invisible indicator.*

In Jabiluka, eleven (65%) scenes had invisible action indicators, which were further categorised into two types, narrative indicators (e.g., Figure 1.1) and possible verbal communication (Figure 8.9). These interpretations are primarily used for discussion and are not definite; it is possible that dots emanating from the body or mouths of motifs could be sweat or blood which would make it a visible action indicator as opposed to invisible. The narrative indicators, typically dots around the body or neck, have previously been interpreted as representing the 'supernatural powers' of motifs (e.g., Taçon and Chippindale 2001a), and this maybe the case but it cannot be substantiated beyond a possible interpretation.

The significant observation from Table 8.9 is the representation of therianthropes depicted with verbal communication. Although, only 14 therianthropes were recorded in Jabiluka, 4 (29%) are depicted with the possible verbal communication indicator whereas only 2 (1%) human figure motifs have this indicator (see Figure 8.10). Dynamic Figure motifs were more likely to have dots around the body and head and only two were scenes had both visible and invisible action indicators.

*Figure 8.10. Traced reproduction of therianthropes from scenes I10049:35 (left) and I30091:24 (right), showing dashes from the therianthropes mouth (not to scale)*

Scene action indicators likely have a similar function within Dynamic Figure scenes to depicting the sex of macropods, in that they help to clarify the intended message for observers. Artists included these scene attributes to provide context to these scenes and ensure that the messages they wished to convey were done so accurately. Scene action indicators, like headdresses, can also be associated with specific motifs within the scene which contributes to the precision of the narrative message a scene conveys. In summary, scene action indicators contributed to the degree to which artists ensured accurate and precise messages were imparted in their rock art.

### 8.6. Stencils and prints in Dynamic Figure art

The relationship between Dynamic Figure art, stencils and prints, both hand and object, has been described by previous researchers (see Section 3.11). In the Jabiluka Dynamic Figure assemblage 41% (n=41) of scenes were depicted superimposed or in very close

proximity to hand stencils (Table 8.10). This does not account for hand stencils present at the site but not in close proximity to Dynamic Figure art (see Chapter 5 for explanation of stencil recording method). Overall, 11 (28%) Dynamic Figure art sites had no evidence of stenciling or printing at all.

**Table 8.10. Stencils and prints superimposed or close to Dynamic Figure art**

| Labels | Count of stencils and prints |
|---|---|
| Absent | 57 (59%) |
| Present | 40 (41%) |
| **Total** | **97** |

The hand stencil types that have been most associated with Dynamic Figure art are 2MF (2 middle finger) and 3MF (3 middle finger) (see Section 3.11; Hayward et al. 2018). Despite this, open hand stencils were the most recorded stencil type in association with Dynamic Figure art (see Table 8.11 and Figure 8.11). Moreover, 3MF stencils were recorded at sites without Dynamic Figure art on at least 20 (4%) occasions, 2MF stencils were only recorded on one occasion without Dynamic Figure art.

**Table 8.11. Stencil and print types in Dynamic Figure art**

| Labels | Count of hand stencil and print types |
|---|---|
| Open hand stencil | 32 (59%) |
| 3MF | 14 (26%) |
| Hand print | 6 (11%) |
| 2MF | 2 (4%) |
| **Total** | **54** |

*Figure 8.11. Above: panel at site 130030 with scenes 18 and 19 showing their association with various hand stencils. Below: panel at site 130030 with scene 54 showing its association with 2MF hand stencils (Photograph Paul S.C. Taçon).*

Table 8.12 is a breakdown of all the different combinations of hand stencil types recorded superimposed or in very close proximity Dynamic Figure art in Jabiluka. This table demonstrates that no combination dominated, although Dynamic Figure scenes associated with only left-hand stencils were the most common.

**Table 8.12. Stencil and print type combinations in Dynamic Figure art**

| Labels | Combinations of stencil and print types |
|---|---|
| LH | 11 (27%) |
| RH | 4 (10%) |
| RH, LH | 3 (7%) |
| H | 3 (7%) |
| 3MF LH, RH | 3 (7%) |
| RH P | 2 (5%) |
| 3MF RH, RH, LH | 2 (5%) |
| 3MF LH, RH, LH | 2 (5%) |
| 2MF LH | 1 (2%) |
| 2MF RH | 1 (2%) |
| 3MF LH | 1 (2%) |
| 3MF LH, LH | 1 (2%) |
| 3MF LH, LH P | 1 (2%) |
| 3MF RH | 1 (2%) |
| 3MF RH, 3MF LH | 1 (2%) |
| 3MF RH, RH | 1 (2%) |
| LH, LH P | 1 (2%) |
| LH P | 1 (2%) |
| LH, RH P, LH P | 1 (2%) |
| **Total** | **41** |

*2MF LH- two middle fingers closed left hand stencil, 2MF RH- two middle fingers closed right hand stencil, 3MF LF- three middle fingers closed left hand stencil, 3MF RF- three middle fingers closed right hand stencil, LH- left hand stencil, RH- right hand stencil, H- undetermined hand stencil, RH P-right hand print, LH P- left hand print, P- undetermined hand print.*

### 8.6.1 Material culture stencils in Dynamic Figure art

In the Jabiluka assemblage of 528 sites, 20 sites (4%) had material culture stencils. Of the 48 material culture stencils recorded at these 20 sites, 24 (50%) of the stencils were boomerangs. Table 8.13 is a breakdown of each of the material culture types recorded.

**Table 8.13. All material culture stencils recorded in study area (not just those associated with Dynamic Figures)**

| Labels | Stencil Types | Count |
|---|---|---|
| Boomerang | Conventional | 20 (42%) |
| | Hooked | 4 (8%) |
| Fibre objects | Bags | 12 (25%) |
| | Necklaces / Armlets | 2 (4%) |
| Spear tips | Multi barb | 5 (10%) |
| Undetermined object | | 3 (6%) |
| Spear throwers | Broad Spear Thrower | 1 (2%) |
| Club | | 1 (2%) |
| **Total** | | **48** |

Of these 20 sites, seven (35%) also had Dynamic Figure motifs present, this excludes the site which had stencils associated with Dynamic Figure art but no motifs (Figure 8.12; Chaloupka 1984b:29). These sites contain a total of nine material culture stencils, six of which were boomerangs, this included both symmetrical and non symmetrical or #7 boomerangs (Table 8.14; see also Figure 3.11). Site I30033 contained three spear tip stencils, two necklace or armlets stencils and three dilly bags. At this site, Chaloupka (1984b:29) argued that he could identify '…teeth inset around the necklaces…' and that a hand stencils was holding one of these objects.

**Table 8.14. Material culture stencils at Dynamic Figure sites**

| Site Number | Count |
|---|---|
| I30030 | 2 (22%) |
| I30150 | 2 (22%) |
| I10007 | 1 (11%) |
| I10113 | 1 (11%) |
| I20174 | 1 (11%) |
| I20183 | 1 (11%) |
| I30145 | 1 (11%) |
| **Total** | **9** |

*Figure 8.12. Panel from site I30033 with various material culture stencils: including bags and necklaces (above) and spear tips (below) (Photograph Paul S.C. Taçon).*

In summary, Dynamic Figure art does have a strong association with hand stencils and prints but stencil and print production almost certainly occurred away from Dynamic Figure art. Moreover, the association between 2MF and 3MF may have been overstated by past researchers. 3MF stencils have a relationship with Dynamic Figure art but artists were producing these much more widely and likely during other time periods. The existence of variation among stencil production, e.g., 2MF, 3MF and material culture, indicates that specific stencil types were associated with particular information and messaging. Material culture stencils most likely have an association with Dynamic Figure art as the vast majority of material culture stencils types recorded in Jabiluka are objects most associated with Dynamic Figure art. However, they were also created exclusive of Dynamic Figure art (see Hayward et al. 2018).

It is likely that stencil production of all types occurred exclusive of Dynamic Figure art but a relationship is present between Dynamic Figure art and stencil production. However, further research is required to better articulate this relationship because of the small sample size of Jabiluka.

### 8.7 Conclusion

This chapter has presented evidence that Dynamic Figure art has the capacity to convey broad information as well as succinct messages to observers. This broad information is presented through the various scene activity types depicted in Jabiluka. More specific, but unknowable, information in Dynamic Figure art was likely encoded within other attributes within these scenes. These attributes include invariant and variant headdress types and scene action indicators. Importantly, these attributes could be associated with specific motifs within a scene, which further allowed Dynamic Figure artists to convey concise information in their rock art. A further attribute that demonstrates the accuracy and precision that artists employed to convey specific messages was their decision to include sexual indicators on macropod motifs. This chapter has also presented evidence that supports previous studies which associated Dynamic Figure art with stencil production. In the next chapter, I discuss the three results chapters to investigate what insights Dynamic Figure art has for ritual behavior.

# Section 3 - Discussion and Conclusion

# Chapter 9: Ritual indicators in Dynamic Figure art

> *Ritual provides the main communal context for learning about the meaning of paintings.*
>
> Howard Morphy (1991:115)

## 9.1. Introduction

Dynamic Figure art affords a rare opportunity to investigate the ritual practice and lifeways of Aboriginal people living in western Arnhem Land thousands of years in the past. It is the combination of Dynamic Figure art's highly figurative form, the myriad of different narrative scenes and vast number of depictions across Jabiluka and western Arnhem Land, which enables archaeologists to explore past lifeways and ritual practice in such depth.

In this chapter, I argue that each ritual indicator, outlined in Chapter 4, is present within Dynamic Figure art and, therefore, conclude that Dynamic Figure art has a significant association with ritual practice. Through this discussion, I also directly address each research question concerning ritual behaviour. The following section outlines the structure and headings under which the ritual indicators and attributes of Dynamic Figure art are discussed and in the following discussion chapter, Chapter 10, I explore the significance of specific ritual indicators and how these provide further insights into ritual behaviour and past lifeways during the Dynamic Figure period.

## 9.2. Dynamic Figure art and ritual indicators

Brandl (1988:172) argued that the focus of Dynamic Figure art '…appears to be esoteric rather than every day activity'. I agree with Brandl and do not consider Dynamic Figure scenes as photographic recordings of a specific even. The presence of therianthropes precludes Dynamic Figure art being direct images of the everyday (see also Taçon and Chippindale 2001a). However, Dynamic Figure art is the product of real people and thus drawn from their experiences of the world, many scenes a reminiscent of recorded ritual performances, and then shaped by the minds of artists (see Bowie 2006; Ingold 2000; Insoll 2004). The figurative form of Dynamic Figure art allows one to examine some information and aspects of the activities people conducted and it is likely that this

was a deliberate act (e.g., Morphy 1999:16). However, one must be conscious that rock art is from the minds of artists, and, therefore, an interpretation of the world (see Dawson 1994; Ouzman 1998).

### 9.2.1 The structure of this discussion

Bell's ritual indicators form the broad headings under which I examine Dynamic Figure art (Bell 1997). As noted, aspects of certain ritual indicators overlap with other indicators; similarly, specific attributes within Dynamic Figure art could be discussed in relation to many ritual indicators. For example, returning to paint at specific places in the landscape, depending upon the definitions used, may be indicative of formalism, traditionalism and invariance within ritual practice. Therefore, I discuss the attributes of Dynamic Figure art indicative of ritual practice under the indicators that I determined the most appropriate and note where a significant relationship to another indicator exists.

I have chosen Bell's headings because they were formed from a broader discussion and investigation of ritual practice and, therefore, allow for an encompassing discussion of the association between Dynamic Figure art and ritual practice (see Section 4.4). Under Bell's headings, I will also discuss Ross's (2003) indicators as they are more succinct and better developed for specifically determining the presence of ritual practice within a rock art assemblage. One of Ross's indicators, self-referential messaging, is taken from Rappaport (1999) which she included in her discussion but not directly as an indicator (see Ross 2003:56). The headings and structure of this chapter are as follows:

**Table 9.1 Ritual indictor headings in Chapter 9**

| Bell (1997:138-164) | Ross (2003:55) |
|---|---|
| Formalism | Specialised place |
| | Stylised behaviour/stylised form |
| | Specialised time |
| Traditionalism | Repetition |
| Invariance | Invariance |
| Rule governance | Self-referential messaging |
| Sacral Symbolism | Form which can hold and transfer a canonised message |
| Performance | Performance and participation |
| | Specialised time |

Ross's approach was well suited to her study of numerous art assemblages through a long temporal period; therefore, the broader headings that Bell employed are better suited to this study's focus upon a single body of art at a distinct temporal period.

### 9.3. Formalism

Three attributes of Dynamic Figure art are consistent with ritual formalism: Dynamic Places, the Dynamic Figure style and the abundance of headdresses within Dynamic Figure art. Formalism within the context of this study is a restricted and codified set of repeated attributes or a special (formal) way of doing things (Bell 1997:139-141). In this section, I will argue how Dynamic Places represent ritual formalism and correspond to Ross's specialised place ritual indicator. I will also show how the Dynamic Figure style consists of a codified set of attributes which corresponds to Ross's stylised behaviour/stylised form ritual indicator. Finally, I will argue how the abundance of headdresses within Dynamic Figure art is indicative of ritual formalness, as opposed to casualness, an indicator noted by Bell (1997:139) and indicative of Dynamic Figure art embodying Ross's (2003:55) specialised ritual time.

#### 9.3.1 Specialised places - Dynamic Places

The mapping of Dynamic Figure art indicates it was painted at specialised places in the landscape which is strongly indicative that it has a relationship to ritual practice. The analysis of Jabiluka shows that there was significantly more Dynamic Figure art production and more time spent painting at specialised places on the eastern and southern sides of the Djawumbu-Madjawarrnja complex compared to other areas (see Figure 6.4). Although not recorded with the same systematic methodology, studies beyond Jabiluka also support this argument for ritual Dynamic Places.

Figure 6.2 illustrated the rock art sites recorded between 2012 and 2014 by the Mirarr Gunwarddebim project. Pertinent to this discussion is the clustering of sites around the major geological features in the survey area. The density of sites in Djawumbu-Madjawarrnja replicates an aerial view of the physical shape of the massif. The area absent of sites in the north-west is the top most part of the formation, while the absence of sites through the centre reflects the flatter grass savanna interior without rock surfaces to paint upon (Figure 9.1). Although, not every possible surface or panel is painted in Jabiluka, the density of rock art sites recorded indicates that the accessible painting surfaces around the rock formation were heavily utilised for art production.

The northern part of the survey area contains numerous boulders and decaying sandstone platforms and is one large complex of densely populated rock art sites.

*Figure 9.1. View of the Jabiluka landscape showing grass savanna (Photograph: M. Abbott).*

In short, the entire survey area had numerous potential art sites during the period of Dynamic Figure art production, at which artists could have chosen to paint. However, only 8% of sites contained evidence of Dynamic Figure art production and the location of those Dynamic Figure art sites was not evenly spread or random across the survey area. Dynamic Figure sites are mostly in the northern part the Djawumbu-Madjawarrnja rock formation or orientated north-south along it (see Figure 6.3). Compare this to the absence of Dynamic Figure art production at other places where suitable panels existed, shown by presence of later art types (see Figure 6.4). It follows that, Dynamic Figure painters were responding to a cultural impetus when choosing panels for art production, I argue that this impetus is best interpreted as ritual practice, when considered in conjunction with the other ritual practice indicators. This interpretation of site and art

production is further supported by considering the analysis of Dynamic Figure scenes and motifs; therefore, considering instances of art production and time spent at Dynamic Places.

Dynamic Places had greater instances of art production and exhibit artists painting for considerably more time than in other areas of Jabiluka. In Figure 6.6 and Figure 6.7, the point symbols on the maps were scaled larger to represent the greater number of scenes (instances of art production) and motifs (time spent painting) recorded at a site. The dense clusters of large dots at the specific places around Djawumbu-Madjawarrnja illustrate that artists spent substantially more time painting at these Dynamic Places. They, or the decedents, returned to paint Dynamic Figures upon multiple occasions at these specific places in the landscape. A further consideration, is that about half (52%) of all Dynamic Figure sites had more than one scene or instance of art production, therefore, artists often returned to the same sites to paint (see Table 6.4).

In summary, the mapping of the Jabiluka Dynamic Figure art sites show that artists were choosing specific places in the landscape to paint Dynamic Figure art during its time of production (see Figure 9.2). Moreover, they themselves and future artists were choosing to return to these places to paint again and were spending more time painting in these places than the other areas of Dynamic Figure art production. Therefore, Dynamic Figure art production was linked to specific Dynamic Places in the landscape and satisfies Ross's (2003:55) specialised place ritual indicator.

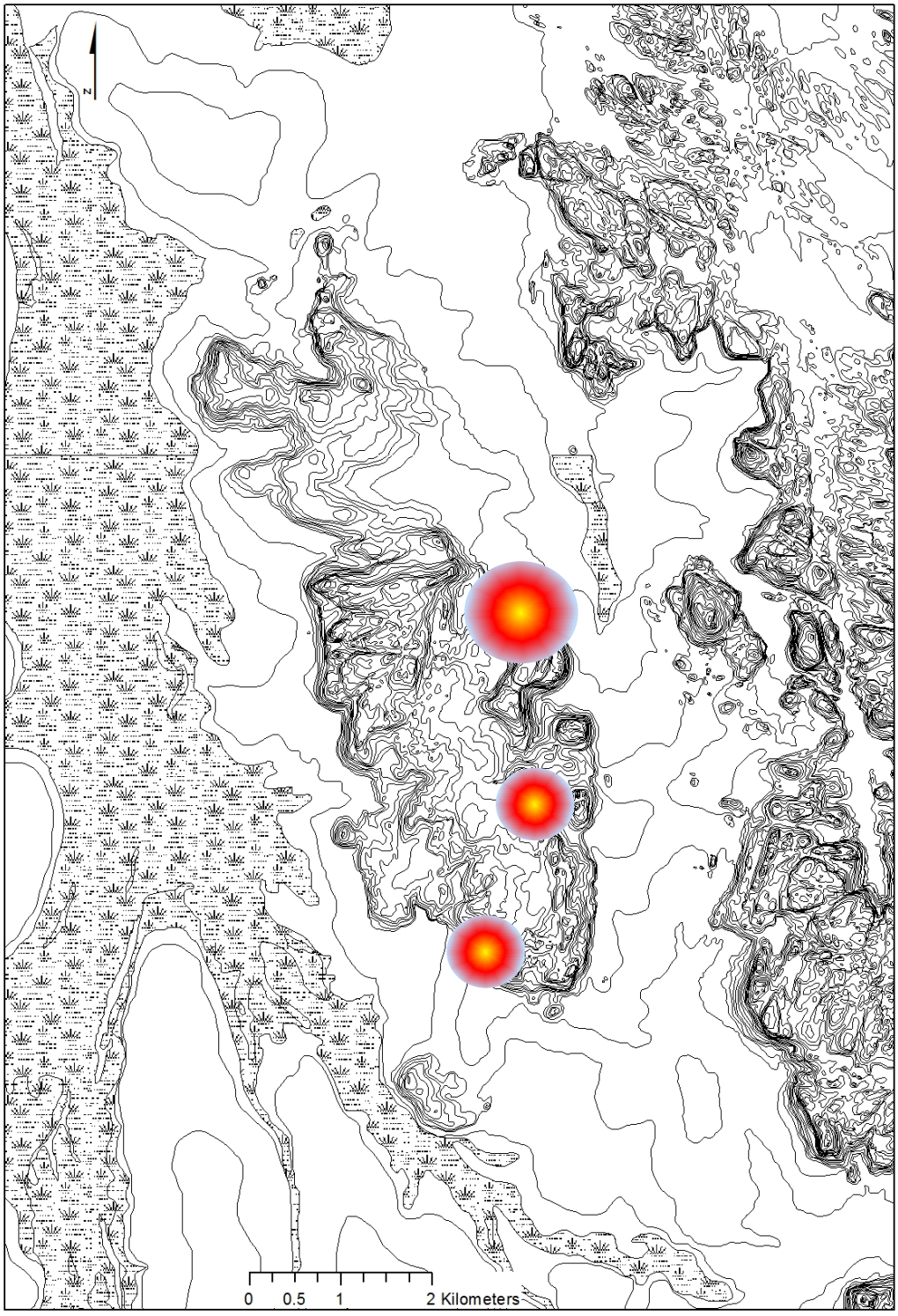



*Figure 9.2. Map of Jabiluka showing the Dynamic Places.*

### 9.3.2 The Dynamic Figure style

The Dynamic Figure style and, specifically, the form of Dynamic Figure motifs are highly characteristic and conform to Ross's stylised form ritual indicator (Ross 2003:55). Chippindale and Taçon (1993:38) posited that: 'The Dynamic manner [style] is so unusual and full of character that we, and colleagues, feel we can identify Dynamic figures from very slight surviving fragments'. In results Chapters 7 and 8, I described aspects of the artistic form of Dynamic Figure motifs and here I provide an assessment of the primary defining features of the Dynamic Figure style. Furthermore, I argue that the combined perspective, an element of the Dynamic Figure style, is present in human figures and fauna which highlights how artists chose to employ the Dynamic Figure style as a distinctive marker in their rock art production.

The Dynamic Figure style is most easily defined by its archetypal occurrence, a human figure motif, typically of red pigment, with defined arm and leg musculature. Figure 7.6 contrasted the different musculature forms present in Jabiluka and highlighted that the arm musculature can consist of defined upper arms, defined lower arms and a single line wrist but it can also be reduced to a single line. The leg musculature is always present and ranges from a defined upper leg muscle and single line lower leg to upper leg muscles, lower leg muscles and a single line ankle (Figure 10). Figure 7.17 is an MCA plot of these different muscular forms, as well as the feet and hand types recorded in Jabiluka. It illustrates that certain combinations were more often recorded together but also that Dynamic Figure motifs were quite homogenous as various combinations of these musculature forms were recorded. This is also supported by the closeness of the point clusters to the central axis, which suggests that no combination was completely exclusive. Therefore, the depiction of musculature is a defining attribute of the Dynamic Figure style and when combined with the associated material culture it forms the Dynamic Figure style.

Dynamic Figure art has a distinct set of material culture, which was discussed in Chapter 3. This material culture is often discussed in relation to its chronological implications; for instance, the presence of boomerangs and absence of spear throwers (e.g., Lewis 1988). However, it is the headdress that is most common and significant material culture object in Dynamic Figure art (see Sections 7.6 and 7.8; see also Johnston 2017). Aside from the vast majority of female motifs and therianthropes, few Dynamic Figure motifs do not wear a headdress and on these occasions, it is often a narrative element of the scene (e.g., May et al. 2017a). Although female motifs do not

wear headdresses, significantly their hair styles exhibit similar variation and narrative mechanisms to headdresses (Section 7.8). This suggests that, like headdresses, a female motif's hair adornment acted as markers to observers of Dynamic Figure scenes (e.g., Johnston 2017). Similarly, Dynamic Figure therianthropes, which typically consist of bodies and limbs with undefined musculature, have distinct and various head types (Section 7.5; see also Taçon and Chippindale 2001a). In this way, a major attribute of the Dynamic Figure style is the use of head adornments or hair as a marker of information about that specific motif in a scene.

The artists' choice to emphasize the body's musculature and the role of head adornments are the most defining attributes of the Dynamic Figure style. Their thin line artistic form, energetic poses and other details further refine the definition of the style but the detailed musculature and various head adornments distinguish them from subsequent styles in the western Arnhem Land rock art sequence. For instance, the musculature separates them from Yam Figures and more recent linear or stick human figures, while the ubiquity and range of headdresses distinguishes them from Simple Figures or Mountford Figures (see Chaloupka 1993a; Jones and May 2017). The formal artistic accomplishment Dynamic Figure human figures and complexity of the scenes in which they are depicted distinguish them from Post-Dynamic Figures, as well as, the absence of spear throwers (Section 8.8; Brandl 1988; Chaloupka 1993a:89; Lewis 1988). Therefore, as stated before, the Dynamic Figure style's primary defining attributes are its defined musculature and the ubiquity and role of head adornments. These constitute Ross's (2003:55) stylised form, as well as, Bell's (1997:139-41) formalism, as they are a codified set of repeated attributes that distinguish this art type from other art types. In short, there is a recognisable Dynamic Figure style. However, it is the use of the Dynamic Figure style in other motifs, beyond human figures, that supports a ritual relationship between Dynamic Figure art and the Dynamic Figure style.

Dynamic Figures were recorded in repeated poses, e.g., the crooked elbow pose or the splits pose, and with certain artistic attributes, one of these attributes was the 'combined perspective'. The 'combined perspective' is a technique used by Dynamic Figure artists that involved the depiction of areas that should be obscured by limbs or objects in front of them (see Section 3.10, Figure 9.3). This attribute was first described by Lewis (1988:42,44-45); however, he termed it the 'crossed legs perspective'. The combined perspective is significant because it is unique to the Dynamic Figure style (Lewis 1988:44-45). This technique was recorded in 16 Dynamic Figure human figure motifs in

Jabiluka but, importantly, it was also documented in macropods (Section 7.4; Figure 9.3). These macropods were imbued with the 'combined perspective' to provide further information for observers, and when coupled with the presence of the other ritual practice indicators, informed observers about aspects of the ritual association of these motifs and their connection to the wider collection of Dynamic Figure art. In this way, the Dynamic Figure style may have been used by artists to associate any motifs they painted with Dynamic Figure art and ritual practice. The Dynamic Figure style permeated all figurative art production at this time and constitutes a stylised ritual form (Ross 2003:55).

*Figure 9.3. Examples of the 'combined perspective' form exhibited upon motif I10019:3:4 (left) and a Dynamic Figure style macropod from site R20012 (right).*

### 9.3.3 Material culture and headdresses as indicators of formalism

The prevalence of headdresses and the specific material culture assemblage of Dynamic Figure art is an indicator of its ritual formalism. This is supported by a dichotomy presented in Bell's definition of ritual formalism, where she argued that ritual has a codified formal way of doing things, which is distinct from the 'casual' ways of doing things (Bell 1997:139-141). Similarly, headdresses are indicative of Rappaport's (1999:33) decorum attribute of ritual as they are associated with specialised times and not the everyday. The prevalence of headdresses also aligns with Ross's (2003:55) specialised time ritual indicator, as headdresses are not a 'casual' head adornment but a

significant material culture object made for and used during times of ritual performance (Berndt 1951a:170; Chaloupka 1993a:110; Johnston 2017; Warner 1958:497-498; Welch 1996,1997). In this section, I discuss how headdresses and the material culture assemblage of Dynamic Figure art indicate its ritual formalism.

In the Jabiluka assemblage 93% of Dynamic Figure motifs are depicted wearing or carrying one or more types of material culture (May et al. 2017a). However, the types of material culture carried and worn are not evenly distributed. Table 7.14 and Table 7.15 compared worn and carried material culture and demonstrated that worn is by far the most prevalent, in order of frequency: headdresses, hair belts then necklaces. A further consideration is that a human figure motif could carry a boomerang and a spear (n=21) - the most prevalent carried material culture objects - while no motif had more than one headdress, necklace or hair belt. Therefore, the count of worn material culture is considerably higher than carried material culture. The prevalence of worn material culture, especially headdresses, suggests they have greater significance as indicators within Dynamic Figure art and it is headdresses that specifically indicate ritual practice within Dynamic Figure art.

In northern Australia, and beyond, headdresses are known to be made for ritual performances; therefore, their prevalence in Dynamic Figure art is indicative of ritual formalism (e.g., Berndt 1951a:170; Hiatt 1965:63; Chaloupka 1993a:110 Welch 1996,1997; Warner 1958:497-498; Figure 9.4). In Arnhem land, Berndt (1951a:170-171) described the Njalaidj ceremony during which the participating Dangbun men constructed ‘conical headdresses’; these were worn as they performed and danced together and the performance culminated in them stripping the headdresses of feathers and burying them in the ground. Similarly, he described that during part of the Kunapipi ceremony two men wore the Pokiti headdresses and danced together both representing the ‘…pandanus seen by the Wauwalak…’ (Berndt 1951b:45-46). In these ritual performance headdresses were made and worn to indicate the formality and significance of the occasion. In this way, headdresses in Dynamic Figure art most likely associate it with a specialised ritual time. However, headdresses are not the only material culture associated with ritual performance.

*Figure 9.4. Old Nym Djimongurrat dancing with a headdress, Nourlangie Safari camp [Munlarr], south of Jabiluka c1960s (Source: Judy Opitz Collection).*

Concerning Dynamic Figure art, Chaloupka (1993a:110) suggested that in '… complexity and variety these three items [headdresses, pubic apron and pubic tassel] of apparently everyday forms of dress have no current Australian counterpart, although in some areas headdresses continue to be made for ritual occasion'. I interpret 'apparently everyday' as Chaloupka also noting the frequency of worn material culture in Dynamic Figure art as likely related to ritual performance; as he also noted the ritual association of headdresses elsewhere (Chaloupka 1988/89:334, 1993b:92). While not necessarily indicative of ritual performance by themselves, Brandl's informants identified the 'dancing skirts' worn by Dynamic Figures as material culture associated with of ritual performance (Brandl 1988:173). Pubic skirts or pubic aprons were not common in Jabiluka rock art, recorded upon 22 (11%) Dynamic Figure motifs, however, they are more common beyond Jabiluka (Chaloupka 1993a:112). When depicted with headdresses, these pubic skirts also support the argument that the material culture of Dynamic Figure art is indicative of the formality of ritual performances.

In summary, headdresses, the most prevalent and dominant material culture type of Dynamic Figure art, and pubic skirts are both formal material culture objects that are made, worn and used during ritual performances and therefore indicate, in conjunction with the other indicators, that Dynamic Figure art is indicative of ritual formalism and represents a specialised ritual time.

### 9.4. Traditionalism

Bell's definition of ritual traditionalism is the repetition of activities and practices from the past; this indicator corresponds most closely with Ross's repetition indicator. In this section, I discuss attributes of Dynamic Figure art that adhere to this definition of ritual traditionalism; however, aspects of traditionalism overlap with ritual formalism, e.g., returning to specific places to paint Dynamic Figure art. This section discusses two prominent aspects of ritual traditionalism: first, the relationship between stencils, prints and Dynamic Figure art and; second, the overall homogeneity of Dynamic Figure motifs.

#### 9.4.1 Stencils and prints as indicators of tradition

In Chapter 8, I argued that a relationship exists between Dynamic Figure art and some stencil and print production (see Section 8.6). This relationship is interpreted as an aspect of traditionalism, as Dynamic Figure artists appear to have specifically chosen to paint on panels and at sites with existing stencils and prints were present, constituting a

repetition of past activities. This repetition also constitutes ritual traditionalism as Dynamic Figure artists likely began creating their own stencils and prints as part of their rock art production.

In Australia, various interpretations of the purpose and meaning(s) of stencils and stencilling have been proposed (see also Hayward et al. 2018); many comparing hand stencils to signatures or makings of individuals (Chaloupka 1993a; Moore 1977; Taçon et al. 2010:424; Rosenfeld 1993). Ethnographically, Macintosh's discussion with Lamderod concerning the art of Doria Gudaluk (Beswick Creek cave) is one such account where hand stencils are 'representing the artist's signature', although some were said to be created for fun (Macintosh 1951:266,1977:191; Smith et al. 2016:1613). Lomderod also explained that hand stencils could become memorials for deceased individuals (Elkin 1952:245-46 cited in Moore 1977:318). Drawing from various ethnographic accounts, Moore (1977:319,322) suggested that stencils can be narrative markers in scenes or with other types of motifs, markers of a person's status, messages to ancestors and people, records of events and part of sorcery practice. He concluded that no single motivation or interpretation of stencilling is possible or suitable (Moore 1977:324). Moore's conclusion is sensible and applicable within the context of this study, as the recorded data from this research does not provide evidence for the motivation of stencilling and is not concerned with ascribing meaning to this rock art.

The indication of ritual traditionalism within stencils, prints and Dynamic Figure art is manifested by three distinct, but not mutually exclusive, components: (1) site selection based upon stencil and print presence, (2) the continuation of older painting processes and (3) the specific production of repeated stencil types. First, I address site selection based upon stencil presence.

The various chronologies of western Arnhem Land have observed that stencilling and printing were present at the very start of the sequence (Brandl 1988; Chaloupka 1993a:89,92; Chippindale and Taçon 1998; Haskovec 1992; Lewis 1988; Taçon and Chippindale 1993). It follows that Dynamic Figure artists observed stencils, and likely other art assemblages, as they travelled through their landscape and in some manner responded to these instances of art production. As part of the recording process, I decided that only stencils and prints superimposed or in very close proximity to Dynamic Figure art would be counted in Table 8.10. This table shows that 41% of scenes were proximally associated with stencils or prints. Overall, only 11 (27%) of the Dynamic Figure sites in Jabiluka had no evidence of stencilling or printing. However, it

is possible that these sites had stencils in the past which have now faded or been over painted. The recurring nature of stencils and prints at Dynamic Figure sites suggests that artists were influenced by their presence. In this way, artists were repeating or continuing a traditional art production practice by choosing to paint at sites which had evidenced of their forbearers and ancestors. Although printing and stencilling occurred at many sites without evidence of Dynamic Figure art, it is probable that the Dynamic Places that artists chose for art production were already established as significant places in the landscape, marked by previous artists in stencils and prints. Therefore, Dynamic Figure art production constitutes a continuation of aspects of traditional practice from before its time.

The specific use of superimposition in Dynamic Figure art production further supports the connection between ritual traditionalism, Dynamic Figure art, stencils and prints. On 21 occasions stencils appeared to be directly under Dynamic Figure scenes, it is important to note that it was often very hard to determine this relationship and this is a tentative assessment (see Figure 9.5). Preservation issues may have also influenced this count. However, beyond choosing to paint at Dynamic Places which likely contained older stencils and prints, it seems that artists actively chose on certain occasions to paint directly over stencils or prints present on the rock walls. This process may have been part of a larger tradition of Dynamic Figure, stencil and print art production. An example of a potential mechanism which would have created this superimposing is noted in the ethnographic literature; as Lomderod explained that painting over of a deceased individual's hand stencil was part of rock art practice in more recent times (Elkin 1952:245-46 cited in Moore 1977:318). However, I do not wish to suggest that painting over a deceased person's stencil was an impetus within Dynamic Figure art production but wish to simply highlight how artists were interacting with previous artworks and stencils particularly. Stencil superimposition and the influence of previous rock art traditions upon Dynamic Figure art production supports the argument that Dynamic Figure art contains evidence of ritual traditionalism. I will now discuss how Dynamic Figure artists made these previous art traditions part of their own art production traditions.

*Figure 9.5. Scene I10034:10 showing superimposed Dynamic Figure motifs and hand stencils (D-stretch manipulation setting yrd).*

There are two attributes within Jabiluka that suggests Dynamic Figure artists incorporated stencils into their art production in a manner consistent with ritual traditionalism: (1) the repeated stencil types, specifically 2MF and 3MF hand stencils and material culture stencils, and (2) the combination of these stencils types in narrative constructions. The Jabiluka stencil assemblage supports arguments made by previous researchers who suggested an association between 2MF and 3MF stencils and Dynamic Figure art (e.g., Chaloupka 1984b:viii; see Section 8.6). These stencil types were recorded in close proximity to Dynamic Figure art in various combinations (Table 8.12). However, the Jabiluka stencil assemblage also demonstrates that this relationship may have been overstated as 2MF and 3MF occur away from Dynamic Figure art (Section 8.6). The association between these stencils and Dynamic Figure art becomes clearer when also considering material culture stencils.

All the material culture stencils recorded in Jabiluka are present and prominent in Dynamic Figure human figure art, except the single spear thrower stencil (Table 8.13; see also Hayward 2016a:317). As noted, Lewis (1988:57) argued that if stencilling was most prominent at any period after Dynamic Figure art production it would be expected that the numerous spear throwers and various spear types associated with those later art styles would have been recorded as stencil in surveys of Arnhem Land (see also Chaloupka 1993a). This argument is supported in Jabiluka as boomerangs, dilly bags, necklaces and wooden spear tips, the more common stencilled objects are specifically

associated with Dynamic Figure art and are found in relation to Dynamic Figure motifs and 3MF and 2MF stencils (Figure 9.6). Boomerangs, mostly associated with Dynamic Figure art, made up 50% (n=24) of all stencilled material culture objects (Table 8.13) A single instance of a stencilled spear thrower supports Lewis's contention by its rarity, as if material culture stencil production was common at other times during the rock art sequence, we would expect to find more instances of spear thrower stencils as they are so significant in later human figure art (see Hayward 2016a; Lewis 1988:57). Artists likely created material culture, 3MF and 2MF hand stencils after the Dynamic Figure period but there is a clear association between Dynamic Figure art and this stencilling practice which suggests that they were more likely created during this period.

*Figure 9.6. Superimposed Dynamic Figure, boomerang, 3MF and open hand stencils at site I30030.*

One site in Jabiluka, although absent of Dynamic Figure motifs, is significant because it combines 3MF, material culture stencils and narrative constructions, a significant attribute of Dynamic Figure art. Site I10032 has numerous material culture stencils including: a spear tip (n=1); symmetrical boomerangs (n=8), uneven or #7 boomerangs (n=2), large dilly bags (n=4), smaller dilly bags (n=2) and a club like object (n=1). The four larger dilly bags each has a 3MF stencil depicted emerging from its opening (Figure 9.7). This composition directly links material culture and 3MF hand stencil production in a narrative construction. It is also clear that these hands are intended to be

present as hands may have been needed to hold the object in place to make the stencil but they are absent from object stencil production at this site and many others. Therefore, these hand stencils are deliberate narrative compositions with an unknown but overt message contained within them, reminiscence of all Dynamic Figure art production. At this site, Dynamic Figure artists may be combining their two art production techniques by incorporating stencilling and narrative compositions.

*Figure 9.7. A stenciled dilly bag with a 3MF hand stencil emerging from its opening from site I10032.*

The stencil production associated with Dynamic Figure art at Jabiluka conforms to Bell's (1997:145) definition of ritual traditionalism. The presence of stencils at Dynamic Figure sites and the practice of superimposing Dynamic Figures over stencils indicates that artists were engaging with art practices from the past by returning to stencilled places and associating their art production with the art that these places contained. Their practice developed during the Dynamic Figure period as artists began creating specific types of hand and material culture stencils, indicating that they adapted certain past activities into new settings (e.g., Bell 1997:145). The repeated process of creating specific hand and material culture stencil types also conforms to Ross's (2003:55) repetition ritual indicator. This practice may have culminated in stencilling narrative scenes with objects and hands at significance places (e.g. Figure 9.7). In

summary, not all stencilled hands and objects were created during the Dynamic Figure period; however, stencil production was a significant part of Dynamic Figure art and its ritual traditionalism.

### 9.4.2 Homogeneity in Dynamic Figure art

A further indication of ritual repetition and traditionalism within Dynamic Figure art is the broad homogeneity of motifs within the Jabiluka assemblage. Ross's (2003:55) repetition indicator was informed by Rappaport's (1999:36) discussion of ritual practice, who argued that one of its aspects is that ritual practice is 'more or less fixed'. Rappaport's argument has parallels with the adaptiveness Bell (1997:145) ascribes to her traditionalism indicator, as both observed the choice by ritual participants to continue to conduct activities from the past as part of ritual practice.

As noted in Chapter 3, the homogeneity of the Dynamic Figure art has been observed in the past but poorly examined or scrutinised. I have previously argued (see Johnston et al. 2017) that the four phases of Dynamic Figure art proposed by Chaloupka were poorly defined and not represented in Jabiluka. That study used the parameters of Chaloupka's phases to categorise the Dynamic Figure motifs of Jabiluka and then argued that the lack of adherence and absence of attributes of the four phases demonstrated that they are not useful or applicable for understanding Dynamic Figure art. This thesis provides further evidence to support this conclusion as well as evidence for the broad homogeneity of Dynamic Figure art.

In Chapter 7, the various ways of depicting the musculature of arms and legs as well as the types of hands and feet were examined. It is important here to reiterate that Chaloupka (1993a:106) used the presence of musculature as a temporal phase indicator. However, he placed too much significance upon single line arms, as this attribute alone does not adequately defined any group of Dynamic Figures, especially as within a single scene artists have depicted only some of their motifs with single line arms (see Johnston et al. 2017). Examination of the Jabiluka Dynamic Figure motifs revealed that a range of more to less defined muscular formed human figures existed, and these forms had broadly corresponding hand and feet types. Figure 7.16 is an MCA plot of these muscular forms, hand and feet types which illustrated that Jabiluka Dynamic Figure motifs could be divided into two types, a more detailed type and a less detailed type (Section 7.4). However, Figure 7.17 illustrated that while these types are present many Dynamic Figure motifs are combinations of these types and fall within the spectrum of

more to less defined forms. Figure 7.17 demonstrated that Dynamic Figure art is broadly homogenous, but contains some more typical combination attributes and forms.

The homogeneity of the Dynamic Figure assemblage of Jabiluka suggests that artists specifically maintained the Dynamic Figure style throughout the Dynamic Figure period of production. Artists had a 'more or less fixed' concept of a Dynamic Figure motif with muscular legs and often muscular arms (see Section 9.3.2). Similarly, Brandl (1988:167) argued that elements of realism captured in Dynamic Figure art were not necessarily typical of motifs after this period. This suggests that the Dynamic Figure style was created by artists and did not constitute an inability to paint in manner other than true to life. The linear form of therianthrope musculature also supports this argument, demonstrating that artists could paint in different manners and chose only to do so when appropriate. This homogeneity suggests that, once established, artists were continuing to maintain a Dynamic Figure style over this period; likely this style was reinforced as they returned to Dynamic Places and observed previous instances of art production. In this way, adhere to a style, indicated by the homogeneity of Dynamic Figure art, represents ritual traditionalism within this assemblage.

Dynamic Figure art's homogeneity was interpreted as ritual traditionalism as opposed to invariance, as I make a distinction between the intent and purpose of these two indicators. Traditionalism is not the strict adherence to a specific way of doing something; but the purposeful acknowledgement and choice to broadly maintain a manner or style in which something was done in the past (Bell 1997:145). Invariance is the strict adherence to a specific way of doing something; in the case of Dynamic Figure art an example includes artists painting specific motifs or scenes in an invariant manner (see Section 9.5). Whereas traditionalism produced a broadly homogenous Dynamic Figure art assemblage that could be easily recognised by contemporaries and archaeologists alike; invariance produced specific Dynamic Figure motifs and scenes that archaeologists can observe as an iconography; but contemporaries would understand as individual agents from specific narratives within stories, myths or both.

In summary, stencilling indicated ritual traditionalism through the continuation of older art practices from before the Dynamic Figure period. While the homogeneity within Dynamic Figure art indicates the 'more or less fixed' adherence to an established traditional Dynamic Figure motif form and style throughout the period.

## 9.5. Invariance

Both ritual practice identification schemes, and Rappaport (1999:36,52), included an invariance ritual indicator, defined as the repetition of specific actions or motifs (Bell 1997:150; Ross 2003:55). Within this research, invariance is understood as a distinct and observable conscience decision by artists to paint and repaint specific motif or scenes. In this section, ritual invariance is demonstrated through specific recurring motifs and motif attributes as well as recurring scenes.

### 9.5.1 Invariance manifested within poses and motifs

Dynamic Figure motifs were observed to have repeated attributes and were painted in repeated poses in Jabiluka and western Arnhem Land, and these repeated motifs likely constitute an adherence to ritual invariance within Dynamic Figure art. These repeated forms are evidence that artists chose to paint specific identifiable motifs, i.e., *the* running woman, as opposed to *a* running woman. In this section, examples from previous studies beyond Jabiluka are incorporated to demonstrate both the temporal and spatial dimension of some repeated motifs in western Arnhem Land. This section has two parts: initially I discuss repeated motif poses and forms and; second, these observations are developed to demonstrate the existence of *the running woman* motif, an example of an identifiable invariant motif.

The ‘splits pose’ was the most recorded repeated pose of the Jabiluka motifs, a pose I also highlight in Chapter 3. In total, 76 (36%) Dynamic Figures were depicted in this pose (Figure 9.8; Table 7.9). Other repeated arm and leg poses were infrequent, but observable (Tables 7.6 and 7.10). In themselves, these poses do not suggest a connection between each motif painted in this form and likely some of these poses are artistic conventions not specific ritual invariance, but when considered as a combination of attributes they form a recognisable iconographic unit (see also Chapter 10). The aforementioned combined perspective seems more likely to be a stylistic trait, that artists who are initiated into it employed when appropriate. However, other poses are better interpreted as part of the contextual information artists embedded in motifs. These attributes may have informed an observer about that specific motif’s identity, its significance within a scene, information about the artist’s repertoire or even about the artist themselves, their initiation and group affiliations. It cannot be ascertained what specific information a ‘human figure holding their weapons below their split legs’ or a ‘boomerang held in a crooked elbow’ imparted to observers but the examination of

these repeated forms can demonstrate the presence of purposeful ritual invariance being employed by Dynamic Figure artists.

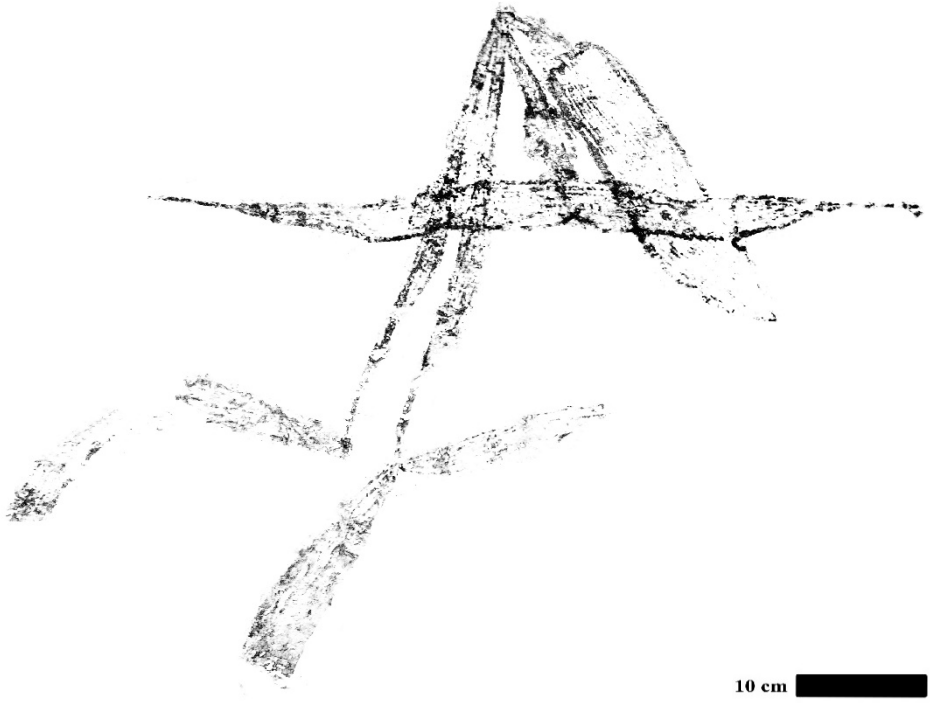



*Figure 9.8. Traced reproduction of motif I1 0019:1:1 illustrating the 'splits' pose.*

The 'full power swing pose' was recorded in eight motifs and among the finest examples of this pose is the female motif in Figure 7.2, reproduced below (see also Chaloupka 1984:47, Site 29). This motif consists of a detailed Dynamic Figure female motif with either no hair or a small bun, running in the splits pose with her forward arm held back as if ready to throw her spear. She also has a dilly bag around her shoulders. The motif may be running or dancing but is clearly depicted 'in motion', I have chosen to describe her as running for simplicity and clarity in this section, but either interpretation would suffice this discussion. This scene had a second motif to her left of which only a foot remained. In 2015, a very similar female motif was recorded at Djidbidjidbi (Figure 9.5). This motif had been damaged by water but it is possible to compare the two running females. The second figure also has either no hair or a small bun, is running in the splits pose and has her forward arm held back as if ready to throw her spear. Like the Jabiluka motif the other arm is held down to carry another material culture object.

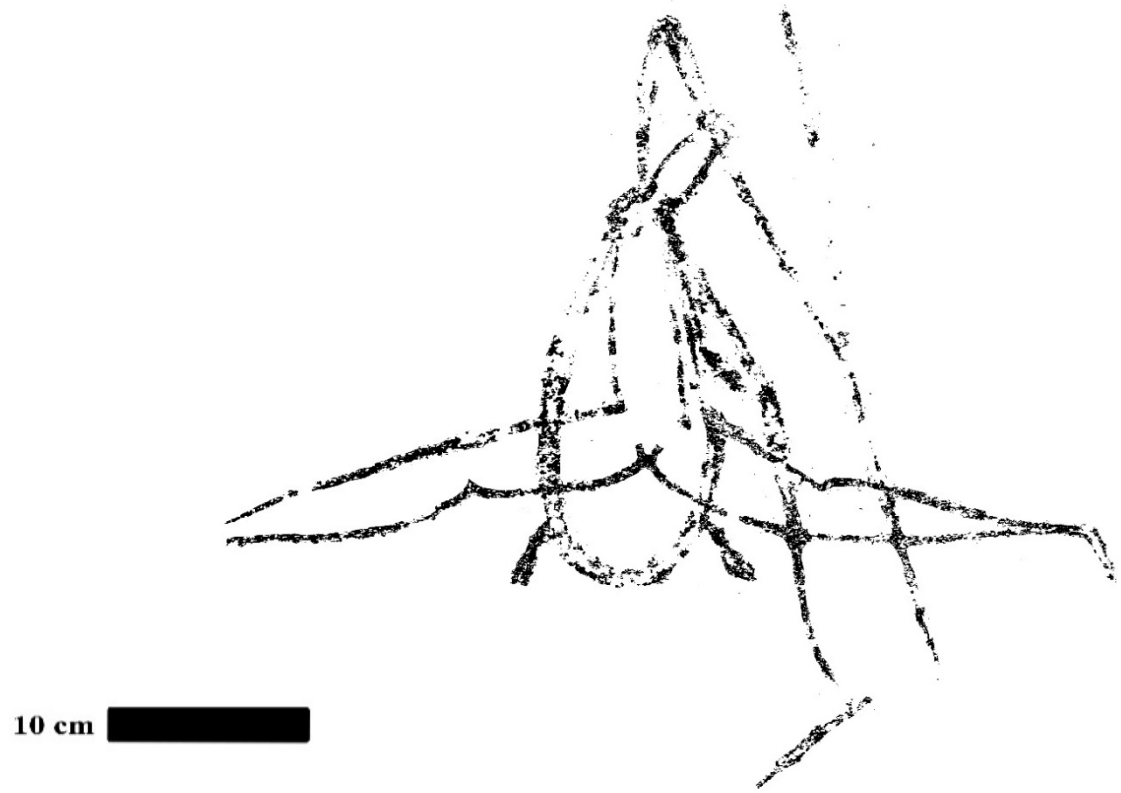



*Figure 7.2 (repeated). Traced reproduction of motif I10046:13:1 showing the full power swing pose.*


*Figure 9.9. Traced reproduction of motif from R30027at* Djidbidjidbi, *showing the 'full power swing' pose.*

A further example of this running female motif was recorded by Lewis in the Deaf Adder creek area (Figure 9.10; see also Chaloupka 1984:345, Site 188). In this example, she has a small undetermined hair style, is running in the splits pose and again has her forward arm held back as if ready to throw her spear. Lewis (1988:193) interpreted the object in her front hand as a fire stick. She also carries a dilly bag; although, this one does not have the same over body form as the previous examples.

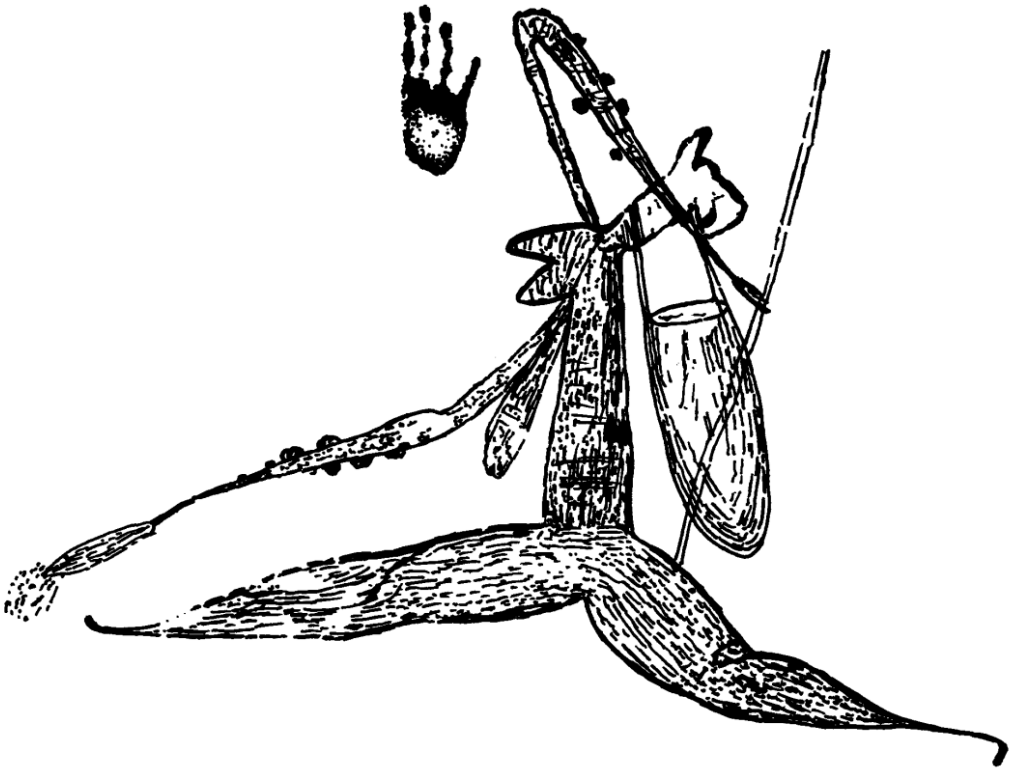


*Figure 9.10. Following Lewis (1988:193, Figure 39): the running woman depicted at Deaf Adder creek.*

The similarities between these motifs suggests that artist/s were choosing to paint an invariant motif. The slight variations between each motif may be the result of individual artistic style or imperfect memories of each artist. It is most likely that artists were specifically choosing to depict a running female in the splits pose, with a dilly bag, an additional stick object (possibly a fire stick) with her arms held back holding a spear as if ready to throw it. Each of these motifs is also depicted in the detailed and defined muscular Dynamic Figure form.

I conducted further investigation into the running female motif by looking at the Chaloupka report from 1984(b), the largest collection of recorded Dynamic Figures. The running woman motif was recorded a further ten times in this report, including the

examples above, that is thirteen instances in total (Chaloupka 1984b:89, Site 60, 218, Site 131, 141, Site 90, 173, Site 173, 177, Site 114, 246, Site 136; 251, Site 139, 262, Site 147, 378, Site 198, 404, Site 212). Chaloupka (1984b:306) described this as the 'characteristic pose' of a female Dynamic Figure yet it is not the only pose for female figures. As well as, the thirteen instances of the running female, a further five were excluded as they were in too poor a condition to positively identify each of the attributes I have outlined, although what remained was consistent with the running female motif (Chaloupka 198b4:242, Site 134, 273, Site 157, 306, Site 176, 331, Site 187, 401, Site 210). Beyond these motifs, a further collection were excluded because they were missing one of the attributes:

- all attributes present and depicted in motion except not in the splits pose (Chaloupka 1984b:319, Site 179, 426, Site 224);
- all attributes present including carrying a spear except her arm was not held back as if ready to throw that spear (Chaloupka 1984b: 188, Site 123, 242, Site 133, 337, Site 188, 430, Site 227);
- all attributes present except no spear (potentially taphonomic) and some have the arm held back as if ready to throw a spear (Chaloupka 1984b:159, Site 105 192, Site 124, 293, Site 168; 202, Site 174).

This analysis precluded these motifs as they were missing a single attribute; however, artists at the time may have understood one absent attribute, particularly the spear, as still constituting invariance, and still the correct manner of depiction for the running female. Within Jabiluka the running female motif is only one of 23 depicted females and only 13 of 37 recorded females in Chaloupka's Dynamic Figure survey (Chaloupka 1984b, 1993a:112). It follows that females were depicted in other poses, activities and with different material culture. However, the running female motif constitutes a significant portion of all recorded Dynamic Figure female motifs. In summary, the running female is an invariant repeated motif and demonstrates that artists were specifically choosing to depict recurring motifs in Dynamic Figure art. This is just one example of invariance to highlight the significance of this attribute in Dynamic Figure art. Other examples which were observed in this study but not in Jabiluka are the 'goose hunter', a motif which is running with a goose or plump bird held around the neck in one hand (Chaloupka 1984:27, Site 21; 59, Site 40; 224, Site 131; Lewis pers. comm. 2015) and a motif that has a fruit bat sitting in its headdress (Chaloupka 1984:133, Site 86, 169, Site 113).

These motifs represent artists specifically painting repeated invariant forms. When these motifs are considered with all the other indicators outline, they likely constitute part of Dynamic Figure ritual practice. They may not have one single interpretation or identity, but their form and attributes likely allowed initiated observers to understand their relationship with ritual practice, ritual information and its associated iconography. A comparison with more contemporary and studied repeated motifs are Ngalyod (Rainbow Serpent) and Namarrkon (Lightning Man). Brandl (1988:74-78) and Taçon et al. (1996) recorded numerous examples of the Rainbow Serpent with a collection of repeated attributes, e.g., snake body, macropod heads, complex tails, and by these repeated attributes observers can identify this motif (see also Taçon 1989a). Similarly, paintings of Namarrkon in western Arnhem Land are recognised by their repeated attributes (e.g., Brandl 1988:179). The running female was part of the early Dynamic Figure iconographic system which artists drew upon to paint specific narratives. These repeated motifs demonstrate part of the invariance present in Dynamic Figure art and in the following section I explore this further by discussing invariance within Dynamic Figure scenes.

### 9.5.2 Invariance manifested within scenes

The presence of invariance within Dynamic Figure scenes is observed as broad adherence to scene types and explored through examples of artists repeating specific scenes. In this section, I discuss the scene types depicted in Jabiluka and in western Arnhem Land to demonstrate the existence of repeated invariant scene types. I will also consider one example from Jabiluka which likely demonstrates artists repeating a specific invariant scene further supporting the argument for ritual invariance within Dynamic Figure art.

I divided the Dynamic Figure scenes of Jabiluka into ten scene types, with different attributes for each type (Table 8.2). Some types were recorded upon single or few occasions while others upon many. It was the invariance between scenes from Jabiluka and western Arnhem Land that help define these scene types. For instance, in Jabiluka there was only one camp scene, where motifs were painted lying around camp fires; however, very similar scenes have been recorded further south in Kakadu (e.g., Lewis 1988:186, Figure 32). While repeated scenes are not exact replicas of one another they share many similar attributes in their overall form. Figure 8.2, reproduced below, is the single violent interaction scene from Jabiluka, which involves a central motif being speared many times, surrounded by two motifs and possibly a ‘talking’ therianthrope

(see Figure 9.11: left). Lewis (1998:179, Figure 25) recorded a violent interaction scene at Deaf Adder Creek consisting of a female motif with many spears piecing her and a similar 'talking' therianthrope observing her (Figure 9.11: right). The two scenes are not the same, but overall they both concern violence, punishment or retribution upon a human figure involving, or presided over by, a therianthrope being. Both scenes are examples of Dynamic Figure artists painting invariant scene types across their landscape. These scenes were easy to compare because they have specific attributes to identify them; however, many scenes are less identifiable, such as running with or without weapons which makes up 51% (n=50) of scenes (Table 8.2; Figure 9.12). These scenes are invariant both as repeated forms across the landscape and as simpler narrative constructions. To borrow from Rappaport (1999:36), Dynamic Figure scenes conform to a collection of 'more or less' invariant types.

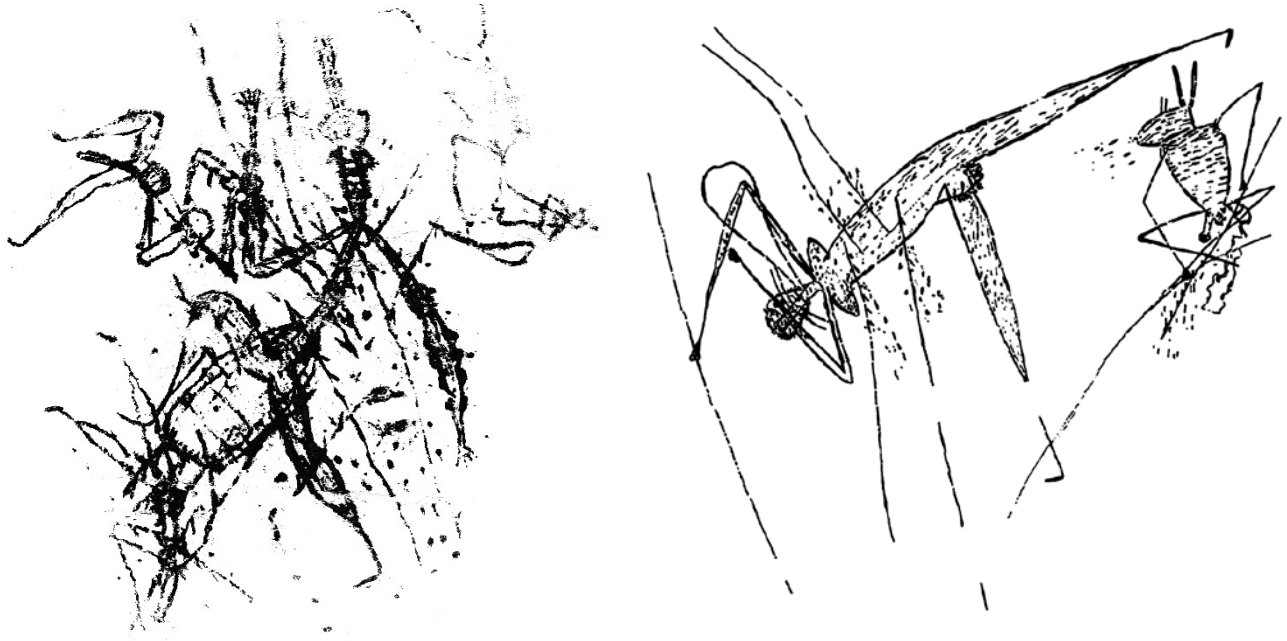


*Figure 9.11. Following Lewis (1998:179, Figure 25) (left) and Figure 8.9 (repeated) (right): two scenes depicting motifs being speared and being observed by watching and speaking therianthropes (not to scale).*

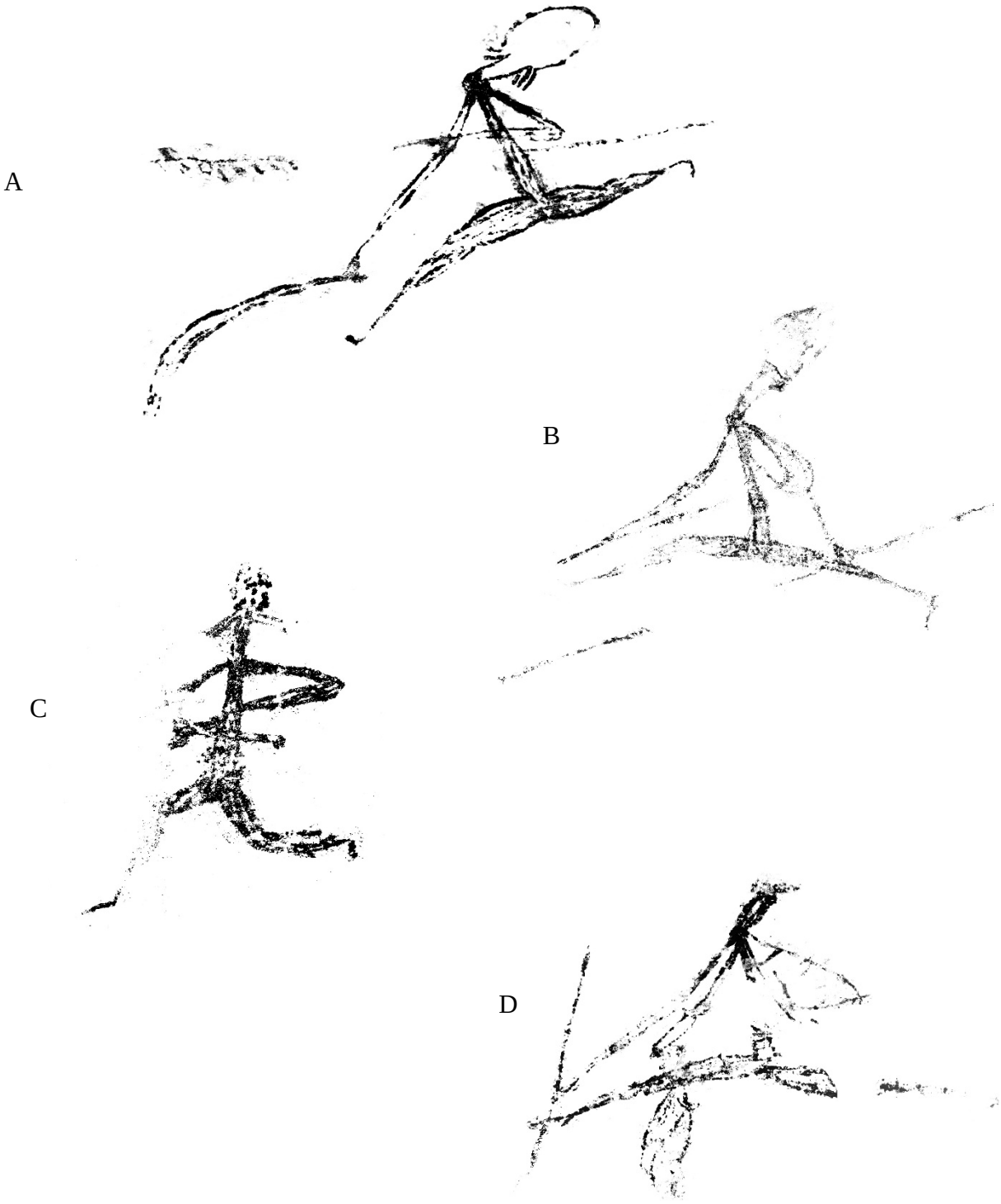
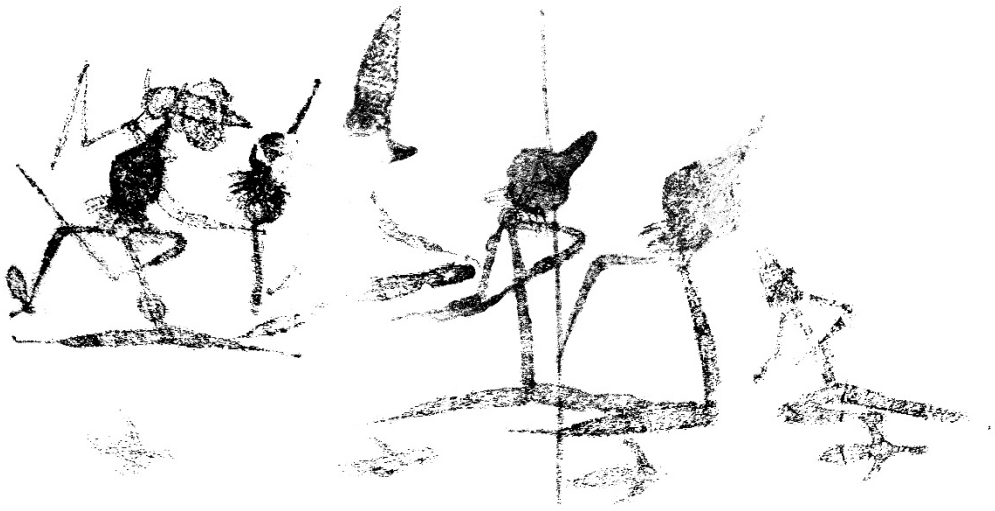



*Figure 9.12. Examples of motifs and scenes depicting motifs in motion with and without weapons: (A) I30143:36; (B)130145:40:3; (C) I30175:81 (D) 130145:40:4 (not to scale).*

One of the ‘more or less’ invariant Dynamic Figure scenes recorded on multiple occasion in Jabiluka is a group of running motifs, who wear similar headdresses and carry a specific set of material culture objects. Figure 9.13 consists of the four scenes of this type recorded in Jabiluka. The scenes depict a group of running motifs, often in the splits pose, wearing a tassel headdress. In scene A, only four of the motifs wear a tassel headdress and form the bottom or ‘closer’ row of motifs to the implied observer. This also demonstrates the use of perspective by the artist(s). In all scenes, some or all the running motifs carry a ‘stick’ object — an object rare in Dynamic Figure art and only recorded in the possession of nine motifs in Jabiluka (Section 7.6). Two of the scenes contain animals or tracks and in two of the scenes the human figures carry a small round object. These running motifs form a ‘more or less’ invariant construction that artists appear to use to create similar narrative scenes. Observers of these running motifs would have likely recognised their form and understood specific information about the scene from the presented attributes. For example, they might be a hunting party from the same band/clan/family, indicated by their similar headdress. In scene A, they come together with another group, indicated by their different headdress, to track an emu and in scene B they hunt a macropod. In scene C, they run with a therianthrope, the second motif from the left, and the motifs at the back of the scene appear not to be in motion. In scene D, they all run in unison holding their typical sticks and round objects. These running motifs are a further example of Dynamic Figure artists using ‘more or less’ invariant forms within their art production.

In this section, I have demonstrated the presence of invariance within Dynamic Figure art. I have shown how Dynamic Figure artists used ‘more or less’ invariant motifs, groups of motifs and scenes within their art production. This invariance is consistent with other examples of repeated ritual messaging (e.g., Ngalyod -Rainbow Serpent); although alone is not indicative of ritual practice. However, this invariance supports the argument that Dynamic Figure art is not just a collection of repeated pictures capturing different sorts of daily activities but, when considered with the other ritual practice indicators, is better interpreted ritual invariance. The interpretation of invariance as ritual invariance is supported by contemporary invariant motifs and art practice in northern Australia which is explored in the discussion of Dynamic Figure iconography in the following chapter (Chapter10).

A



B

C

D

*Figure 9.13. Traced reproduction of in motion with weapons scenes: (A) I10046:75;* (B) *I10039:31;* (C) *I10034:70; (D) I10039:30 (not to scale).*

### 9.6. Rule governance

Rule governance within ritual practice concerns the codified acceptable actions and behaviours appropriate to its performance (Bell 1997:155). Bell emphasised that rule governance legitimised the power within a group and mitigated challenges to the status quo (Bell 1997:155). Similarly, Rappaport (1999:55) noted this attribute of ritual practice, which he called self-referential messaging. In Chapter 4, I discussed research that applied information exchange theory to demonstrate how rock art can contain information and messages to observers; however, in northern Australia this has often been applied to discuss cultural geographic boundaries (e.g., Taçon 1993). Examining rule governance is more difficult as it goes beyond identifying patterns within a region to interpreting aspects of the more complex information embedded within scenes and motifs. It is the detailed figurative form of Dynamic Figure art, both motifs and material culture, and the manner in which artists have arranged the motifs into narrative scenes that has enabled me to employ formal methods of analysis and examine aspects of rule governance. In this section, I argue that Dynamic Figure art contains more complex information than boundary markers that can be examined by archaeologists. Moreover, this information specifically relates to rule governance where Dynamic Figure art, as artists have demarked aspects of status and power between individual motifs (see Johnston 2017; May et al. 2017a). In other Dynamic Figure scenes artists have depicted, through the narrative activity, indications of appropriate behaviour and distinct roles for individual motifs, on occasion specifically related to their sex. In the next chapter (Chapter 10), I will explore why artists may have made rule governance prevalent in Dynamic Figure art and in a manner, which can be examined by uninitiated observers (e.g., Rappaport 1999:52).

#### 9.6.1 Status, power and rule governance manifested through material culture

Investigations of inequality have been a staple of archaeology and studies of past societies (Ames 2007; Chapman 2003a); the earliest iterations stemming from archaeologists drawing from social theorists (e.g., Hobbes 1651) and were often broad studies of many societies (e.g., Childe 1942). Inequality is variously defined depending on the study, archaeological source(s) and the society being investigated. Berreman's (1981:8) broad definition of inequality is useful here as he defined inequality as the differences between people in a society that are deemed socially 'relevant' (status), in turn these socially relevant differences can equate to power, the agency granted from these differences, within that society. This distinction is important as status does not

necessarily equate to power (Ames 2007:488). Wolf (1999:5) described different types of power within societies of which one, social power, is exhibited as social hierarchies and the power of individuals to control others. I argue that this form of power is depicted within Dynamic Figure art and can be investigated by analysing the figurative scenes. It can be very difficult to investigate inequality and power in hunter gather societies, especially in the distant past, where the material culture remains are few or not informative (Ames 2007:496,508). When investigating inequality and power, archaeologists have relied on comparisons of different individuals in a society and comparing their structures, burials, osteology and possessions, equating better or more health, skeletal remains and things with power (e.g., Haviland and Moholy-Nagy 1992). For instance, Feinman and Neitzel (1984:57) found that worn material culture and body ornamentation were the third most typical maker of status and power after a person's house or if they had multiple wives. Worn material culture is a useful maker to examine power and status in Dynamic Figure art but it must be considered within the context of art production in northern Australia. As Ames (2007:508) argued only archaeologists can examine inequality in the distant past, but they must rely upon multiple sources, especially sociocultural anthropology.

Morphy (1993:92) described how status and power are entwined with painting, initiation and knowledge within Yolngu society in northeast Arnhem Land. Concerning painting and power he explained*:*

> Although secrecy is important in the creation of men's power, it is equally important that women and uninitiated men know something of what men are controlling…the fact that knowledge is partially shared and partially experienced by women and uninitiated men may clearly be an important element in binding women emotionally to the male-controlled cults and in making cults effective at a societal level. (Morphy 1993:92)

This *knowledge of something* of a secret power is what is observable within Dynamic Figure art — to borrow Morphy's (1993) narrative, 'through glimpses of uncomprehended patterns'. I argue that if power is linked to painting, as it is in contemporary Arnhem Land, it is not surprising that it can be examined within rock art of the past although not necessarily manifest in the same manner. In this section, I will provide evidence of how Dynamic Figure artists used the presence and absence of material culture to indicate status and power between motifs within scenes. Morphy's

discussion also suggests why these relationships may have been painted and the limitations of what can be interpreted from the Dynamic Figure art. Following this, and as discussed in my theoretical framework (Chapter 4), I am not trying to interpret the complexity of these relationships beyond observing artists marking distinctions between status and the more and less powerful (or initiated) human figure motifs within a scene.

In Johnston (2017), I explored how power in Dynamic Figure art is manifested through headdress variation or uniformity within depictions of ritual practice concerning therianthrope or animal beings. In the scenes examined, artists had chosen to mark similarities or differences between motifs by similar or variant headdresses. In Figure 9.14 (Figure 7 from Johnston 2017; Lewis 1988:190 Figure 36), I argued a distinct power relationship was being depicted as all, but one motif had the same headdress, and the differentiated motif was interacting with the animal being (Johnston 2017). The artist had indicated, via the headdress, that the differentiated motif was significant within this scene, likely the most powerful or most initiated to the ritual practice being depicted (see also 9.8 and Warner's description of the Sea Gull line).

*Figure 9.14. Following Lewis (1998:190, Figure 36): A scene showing motifs spaced around a central motif, each wears a similar headdress except the motif on the far right.*

Similarly, in May et al. (2017a) my co-authors and I considered one Dynamic Figure scene which distinguished status and power more overtly through the presence and absence of material culture (Figure 3.8 repeated below). In this scene, one motif wears a headdress, hair belt, pubic skirt and necklace indicating their status, as these objects a most often associated with status (e.g., Berndt 1951a:170; Warner 1958:497-498; Welch 1996; 1997). That motif is also conducting an activity, suggesting power, to another motif that is unadorned with material culture, i.e. without status. The presence and absence of material culture and activity in this scene highlights the status and power relationship between the two motifs (May et al. 2017a).

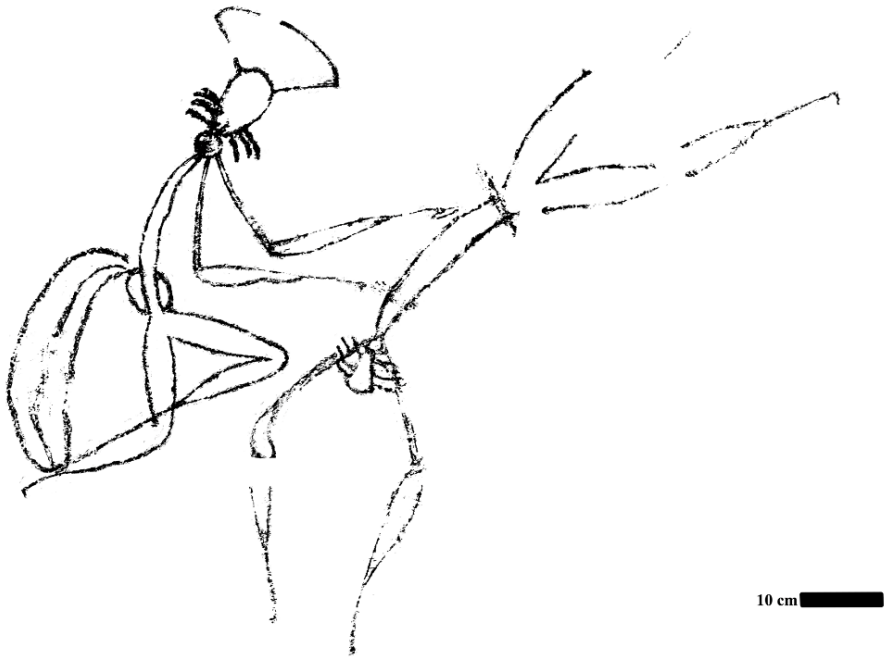



*Figure 3.8. (repeated) Traced reproduction of I30030:56, showing initiated and uninitiated men (see also Chaloupka 1993a:230; May et al. 2017a).*

Scenes containing clear status demarcation through the presence and absence of material culture were recorded on four occasions in Jabiluka. Figure 9.15 is a further example, in this scene two human figures are superimposed upon one another, possibly engaged in sexual intercourse, flanked by two asterisks or camp fire symbols. Both Dynamic Figures wear hair belts but the right motif has a very large headdress, this motif also has its arm and legs spread around the other motif. The presence and absence of a headdress indicates the status relationship implicit in the scene and the arm and leg position may also inform part of this message, possibly indicating the power associated with this status. To an initiated observer, as described by Morphy (1999:15), the information embedded in this scene may also relate to broader social structures, gender and appropriate material culture dynamics during the Dynamic Figure period.


*Figure 9.15. Traced reproduction of I30030:19 showing a power relationship demonstrated through the presence and absence of material culture.*


*Figure 9.16. Traced reproduction of I30030:52 showing a power relationship demonstrated through the presence and absence of material culture (no scale).*

Figure 9.16, a trio of less defined Dynamic Figure motifs depicts another status and power relationship (see also Chaloupka 1984b:43). In this scene, two motifs both wearing headdresses, hair belts and holding boomerangs are flanking and reach out to a central motif who has no headdress or hair belt. This central motif has less definition in their legs than the other two motifs, which might be significant to informed observers. Like the previous scenes noted, the status of the human figures is indicated through the presence and absence of material culture. Also, significant within this scene is the clear narrative placement of the more powerful motifs around the less powerful motif. This scene may be enforcing the seniority of initiated members of the ritual, as well as indicating the appropriate actions and behaviours of all participants in the ritual performance. In short, it appears that this scene reinforces the status and power of the initiated members of the ritual (e.g., Bell 1997:155; Morphy 1993:92; Rappaport 1999:52; Ross and Davidson 2006:313). Although it's been well demonstrated elsewhere (e.g. Boehm 1992, 1999), the presence of status and power markers within Dynamic Figure art further challenges the notion that past hunter-gather societies were predominantly egalitarian. In the next section, I expand upon the placement of motifs within scenes as evident of ritual practice appropriate action and behaviour marking and being used to reinforce power relationships.

### 9.6.2 Actions, gender and rule governance manifested in scenes

Early studies of Dynamic Figure art noted the significance of the narrative placement of motifs within scenes (e.g., Brandl 1988:173). In Johnston (2017), I briefly discussed how overt scenes of ritual practice in Dynamic Figure art often have motifs surrounding another central motif, creating a sense of space and focus within the scene (see also May and Domingo Sanz 2010; Section 9.7). These types of scenes support the argument that Dynamic Figure artists indicated appropriate actions for ritual practice within their art; moreover, other scenes contain this information as well as indication about the different roles of sexes and specific indiviuals within a ritual performance.

In Figure 9.17, eight Dynamic Figure motifs are arranged along a horizontal axis, with two slightly lower than the implied central line. The motifs are divided by their sex with each of the motifs on the left being defined as female and the four motifs on the right depicted without breasts and, therefore in this instance, interpreted as male. This distinction is also enforced by the direction that each motif is facing: each female faces left while the males appear to be in a small circle or at least facing different directions towards one another. Each female motif performs the same action with their arm

outstretched, possibly dancing. Another distinction is the hair styles of the females, the one closest to the males wears long hair while the other three wear plaits. Like in the previous scenes, head adornments are indicating information, possibly in this example a subtler depiction of status and/or power, within a Dynamic Figure scene. The placement of the motifs in this scene is a demonstration of sex-specific appropriate actions during ritual performance, indicated through Dynamic Figure art.


*Figure 9.17. Traced reproduction of I30030:18 showing how the placement of motifs within a scene could demonstrate appropriate actions and behaviours during ritual.*

Although not from northern Australia, Tonkinson's account of the Daawayil (Da:wajil) (rainmaking) ritual performances, conducted at Jigalong in late 1969 early 1970, succinctly described an ethnographic account of distinct sexed roles within ritual performance (Tonkinson 1971:AIATSIS PMS 2395; TONKINSON.R01.CS). Tonkinson explained that the Daawyil ceremony includes:

> Division of all participants into two groups, on a generation level basis; sexual division; division between novices and initiated; division between men-only activities performed in the bush, and activities occurring near camp and involving men, women and children; ritual division of labour … (Tonkinson 1971:2)

In the various performances and activities associated with larger Daawyil ritual performance, men and women had distinct roles and appropriate actions. In Figure 9.18,

a similar distinction of sex and gender roles is being depicted. Significantly, this appears to depict gender distinctions during the ritual performance. Similarly, numerous photographic collections from northern Australia depict ritual performances and show the different roles that men and women have in those ritual performances (see e.g, AIATSIS: ALTMAN.J01.CS; ALTMAN.J01.BW; EDWARDS.R01.CS; MACINTOSH N01.DF; MACINTOSH.N02.DF).

In the last scene I will discuss in this section, Figure 9.18, the status and power indicated is harder to determine yet there is a clear demarcation of appropriate actions. In this scene four female motifs conduct an undetermined ritual activity. Most prominent in the scene is one female touching the feet of a female who is lying down; the other two females are standing or possibly dancing, as their hands are above their heads. Once again, it is the distinct placement of motifs that indicates both their role and the appropriate actions for this ritual. The central two females have clearly defined roles, an active motif conducting an activity to a passive motif, possibly indicating power but in which direction cannot be determined. This is similar to the Figure 9.15; however, the status relationship is not established by the presence and absence of material culture. For this pair, the lying motif wears a necklace while the active motif appears not to; it is possible that the necklace alone indicates status and it follows the same active and passive power relationship as Figure 3.8 (see also May et al. 2017a). Alternatively, the necklace indicates the opposite and it is the lying motif, wearing the necklace, that has more status and power in the depicted relationship. This scene is one where information held by an initiated observer or someone who has glimpsed this ritual, is required to confidently interpret the relationship; however, it still depicts and communicates rule governance through marking this relationships and appropriate actions.


*Figure 9.18. Traced reproduction of I10019:3 showing how the placement of motifs within a scene demonstrates appropriate actions and behaviours during ritual.*

The Dynamic Figure scenes I have focused on in Section 9.6 are those which can be examined using formal methods of analysis. As Morphy (1999:15) noted, it is not unreasonable to assume that artists explicitly painted indicators of status and power unencoded to observers, something I have argued exists within Dynamic Figure art. Similarly, Rappaport (1999:52) argued that self-referential messages are those which are not encoded by the performers and are intended to be comprehended to a reasonable extent by the uninitiated. This further supports the existence for a connection between Dynamic Figure art and ritual practice, as this art contains evidence of rule governance that is explicitly identifiable by uninitiated observers. As an archaeologist, it is only in the most explicit depictions of status and power, potentially intended for the least initiated observer, that I can identify rule governance. However, the presence of a wide variety of headdresses, each marking something about the associated motif, suggests that further more subtle or complex indication of status and power might be being depicted. In these scenes, a more informed source, who has glimpsed ritual performances and is privy to some level of knowledge about the scenes depicted, may

clearly understand the form of rule governance and status and power depicted. As quoted initially in this chapter it is through ritual that one can learn about art (Morphy 1991:115).

### 9.7. Sacral symbolism

Bell (1997:155-156) defined sacral symbolism as the supernatural contained within ritual practice which is often associated with its origins and authority. Rappaport (1999:53) described a similar supernatural power inherent in ritual practice and emphasised the significance of canonical messaging within ritual (also see Ross 2003:54,56-57). Rappaport (1999:53) also emphasised that a significant aspect of canonical messaging is its invariance, although invariance is integral to ritual more broadly. Sacred symbolism or canonical messaging is linked with rule governance but concerns sacrosanct or religious rules and information, often focused on the unchanging nature of the world (Rappaport 1999:53-54). The canonical messages of ritual are contained within symbols and are not easily interpreted by uninformed sources. So, it is not possible to comprehend the meaning of the symbols or canonical message contained within Dynamic Figure art. However, certain attributes demonstrate their presence, most notably therianthropic beings. In northern Australia, therianthropes are linked to religious belief, especially sacred ancestors, and are encountered during ritual practice (Taçon and Chippindale 2001a:201). In this section, I discuss the therianthropes depicted in Jabiluka and argue they indicate the presence of canonical messaging and symbolism within Dynamic Figure art. As well, therianthropes support the conclusion of the presence of Ross's (2003:55) specialised time ritual indicator in Dynamic Figure art.

#### 9.7.1 Therianthropes as indicators of ritual time

Therianthropes have a prominent presence in Dynamic Figure art (Taçon and Chippindale 2001a). They can be identified by their distinct single line limbs and animal heads (Section 7.5; Figure 9.19). In Jabiluka 14 therianthropic motifs were recorded, comprising less than 7% of all anthropomorphic motifs. Other studies, from further south in Kakadu, recorded therianthropes in higher frequency yet as an overall low percentage of motifs: Chaloupka (1993a:112) recorded 45 therianthropes comprising 3% of his sample, and Taçon and Chippindale (2001a:190) recorded 45 but did not state their overall percentage. The higher percentage frequency of therianthropes in Jabiluka may be significant or a consequence of the systematic field recording

method. Regardless, it is the presence of these supernatural beings in Dynamic Figure art that demonstrates the sacral symbolism present within these scenes.

The association between therianthropes, the supernatural and ritual practice is not unique to Dynamic Figure art or Australia (e.g., Jolly 2002). In Australia, Chaloupka


*Figure 9.19. Traced reproduction of I10067:78 showing the form of a therianthrope motif.*

(1993a:112) described Dynamic Figure therianthropes as '…the first concrete evidence of mythogenesis in rock art'. This statement is accurate, however, as therianthropes are depicted interacting with motifs in scenes, it is more likely that therianthropes were both mythic as well as active participants in ritual performances. It is explicitly during ritual performances when people would interact with therianthropes:

> In common contemporary experience in Aboriginal Australia, this occurs in dreams; visions can also be induced through ceremonies involving sleep and food deprivation, rhythmic dancing and secret ritual. Sometimes Ancestral Beings are 'seen' on such occasions; indeed, the purpose of these ceremonies is to make contact with them. (Taçon and Chippindale 2001a:200)

Taçon and Chippindale (2001a:201) also described:

> … usually it is only medicine men that can ‘see’ Ancestral Beings. Sometimes initiates or senior men may ‘see’ one in ceremony; occasionally they may visit in dreams.

In Johnston (2017, Figure 6; reproduced here as Figure 9.20), I described one such scene where motifs interact with a macropod headed being. Similarly, Figure 9.11 contains a therianthrope with a club surrounding, with other motifs, a larger Dynamic Figure motif. In these scenes, the placement of motifs and their animated poses indicates a narrative reminiscent of ritual performances (see Section 9.8) and it is during specialised ritual times when these supernatural therianthropes are present. In short, the presence of therianthropes in Dynamic Figure scenes indicates that they are illustrating a specialised ritual time.


*Figure 9.20. Traced reproduction of I10024:27 showing how the placement of motif within a scene demonstrates appropriate actions and behaviours during ritual performance.*

### 9.7.2 Therianthropes as indicators of canonical messages

Therianthropes themselves are suggestive of ritual but it is the recurring types that indicates therianthropes are closely associated with canonical messaging within Dynamic Figure art. In Jabiluka, the 14 therianthropes were divided into four types (Figure 7.19). Certain therianthropes, types 1, 2 and 4, were recorded on more than one occasion (Table 7.13).

Taçon and Chippindale (2001a) and Chaloupka (1993a) also observed recurring therianthrope types. Figure 9.21 shows the heads of the three examples of the type 2 therianthrope recorded in Jabiluka. Although not identical each has a similar triangular form and a head adornment, possibly a headdress. Each was recorded conducting different activities, from left: violent interaction scene, running (with weapons) and stationary. The significance and identity of this therianthrope cannot be determined yet the presence of a supernatural being in these scenes indicates part of an invariant canonical message in each. In this way, therianthropes were invariant forms, a particular set of information, that was painted by Dynamic Figure artists in their scenes. While their inclusion indicates to uninitiated observers that a scene is of a ritual time and performance, to the initiated observer they would have likely held canonical messages, providing context and information about the participant(s) in the scene and its deeper meaning(s).

*Figure 9.21. Traced reproduction of the heads of I10049:35:3; I10034:70:2; I10046:76:1, therianthrope type 2 demonstrating invariant messaging in Dynamic Figure art.*

Invariance within Dynamic Figure therianthropes is also present beyond Jabiluka. Brandl (1988:173) recorded one macropod type on enough occasions that he referred to it as ‘the Kangaroo man’. Taçon and Chippindale (2001a:192-194) also observed trends among the therianthrope types they recorded, further suggesting an invariance within this motif type. For instance, they found flying fox therianthropes predominantly carried spears, while macropod therianthropes usually carried boomerangs (Taçon and

Chippindale 2001a:192). In Jabiluka these therianthropes were recorded — on one occasion carrying boomerangs, and on another carrying a spear. Also, Taçon and Chippindale (2001a:192) found that macropod therianthropes did not have sexual organs depicted, this was consistent in Jabiluka.

In short, the invariant therianthrope motifs in Dynamic Figure art are indicative of the presence of canonical messaging and are telling of ritual time; further supporting the relationship between Dynamic Figure art and ritual practice.

### 9.8. Performance

The ritual performance indicator refers to public participation in a specific set of acts relevant to each ritual[1].Within this thesis, I have used the term ritual performance for consistency; however, when referencing other researchers who use the term ceremony this has been kept (see Chapter 4 and Chapter 8). The performance indicator was stipulated by Bell (1997:159-160) and Ross (2003:55); however, it is quite difficult to directly examine performance within static rock art. I have argued previously (Johnston 2017), that circumspect evidence does exist and that Dynamic Figure artists painted symbolic ritual performances and, in this section, I will further expand upon ritual performance in Dynamic Figure art. First, in a north Australian context, the presence of headdresses directly associates Dynamic Figure scenes with group dance and the performance aspect of ritual practice. This has parallels with headdresses as indicators of formalism (Section 9.3). Second, I argue that Dynamic Figure artists specifically painted aspects of performance within Dynamic Figure scenes using perspective, space and the placement of motifs. This discussion has parallels with rule governance in scenes (see Section 9.6). Most rock art in Arnhem Land does not have obvious evidence of performance, however, attributes within Dynamic Figure art indicate its association with ritual performance.

#### 9.8.1 Headdresses as indicators of performance

The relationship between headdresses and ritual performance has been presented in relation to formalism (Section 9.3); however, it is equally applicable to indicate the performance ritual indicator within Dynamic Figure art. As previously discussed, headdresses are known to be made for use during ritual practice and are employed to

[1] Not necessarily public to an entire community but public and inclusive to the appropriate participants of that ritual.

mark the formalism of that specialised time (e.g., Berndt 1951a:170; Warner 1958:497-498). For this reason, Welch argued that much of the art produced in northern Australia relates to ritual performance (Welch 1996; 1997; 2012). However, headdresses also served functions within a ritual performance to transform participants and indicate their roles and significance within that ritual performance (e.g., Berndt 1951a,1951b; Warner 1958).

In western Arnhem Land, ethnographic accounts of ritual performances explain how headdresses are used subtly and overtly to transform performers into specific agents within the context of the ritual. Warner's account of Gunabibi (Kunabibi) (his nomenclature) has examples of the subtle and overt use of headdresses in this manner. During the Gunabibi, two Yirritja men have the role of messengers throughout the ritual; to indicate this role they wore white forehead bands (Warner 1958:292). Warner (1958:292) noted that other men also wore white head bands during the ritual performance; however, for the messengers, their headdresses indicated their significant role and transformation for this ritual context. However, a subtlety is present as other men may also wear similar attire, but for the Yirritja messengers their headdresses were compulsory. This subtly is in stark contrast to the role of the headdress during the Sea Gull dance line of the same ritual performance.

In the Sea Gull line, the dancer wore a specific headdress to represent his transformation into the male sea gull (Warner 1958:293). At this stage of the performance, neither the leaders nor chorus participants were decorated, the dancer alone is singled out by his body decoration and headdress (Warner 1958:293). Warner explained that there is a specific form of headdress that is made for the male sea gull; he described it as a 'dunce cap' with specific species of bird feathers, blood and red ochre (Warner 1958:294, also see plate VIB). The dancer's headdress performed two overt roles; it transformed him into a specific ritual agent (male sea gull) and it acted as an identifier for observers who would know his role and significance within the Gunabibi. However, the relationship between headdresses and performance goes beyond transformation and identity, as headdresses are used as part of ritual performance.

Warner described how Yolngu (Murngin) interpreted aspects of the Gunabibi and specifically the role of animals affiliated and symbolised by headdresses during the ritual performance:

> The tall headdresses of the dancers are supposed to be the snake's neck or the neck of the animal that is being danced. They are also the house of the two women. The feather headdress on top of the dunce-cap arrangement is the snake's head looking over the house. And when the whole headdress is knocked off at the end of the dance, it means the house has been destroyed by the rain and swallowed by the snake. (Warner 1958:297)

Within this ritual, headdresses have a significant symbolic function as participants interact with the headdresses as part of the ritual performance. Warner's description of headdresses within Gunabibi has provided examples of their use within and relationship to ritual performance. This clarity and distinction is not directly observable in static two-dimensional rock art but attributes of Dynamic Figure art indicate that artists depicted ritual performance through headdresses.

Within the Jabiluka assemblage, two statistics support the contention that artists used headdresses as indicators of performance. First, the overall variation of headdresses compared to other types of material culture and, second, the invariance or variance among headdresses within a scene. As noted above, headdresses are the most prevalent and significant material culture type in Dynamic Figure art (Section 9.3; Chapter 7). However, headdresses were also exhibited with the most variation of any type of material culture. In total eighteen types of headdresses were recorded in the Jabiluka Dynamic Figure art assemblage (Section 7.8). Many of the headdress types had few examples: there was only one example each of five of the headdress types and only two examples of six of the headdress types (fan; hooked; leaf; three circles; triangular; tube with tassels; see Table 7.18). However, others were more prolific, 79 examples of 'oval' headdresses and 25 examples of 'tassel' headdresses were recorded (Table 7.18). The nomenclature used in Table 7.18 consists of descriptive labels and variation was recorded within these types, for example, the oval type of headdresses had 6 variants within the oval form (Figure 9.22).

*Figure* 9.22. *Traced reproduction of the oval headdress types. From left: I301150:44:1; R10009:69:3; 1I0046:75:5; I30091:25:1; I30091:25:2 (not to scale).*

Slight variation within broad form types is reminiscent of subtle headdress distinction observed by Warner (1958:292); where he observed that many individuals wore a white headband but specific individuals required the headband to indicate their role in the ritual performance. The subtle variation within types of headdresses would have allowed artists to mark these distinctions between motifs. The distinction would be possible within scenes where motifs wore the same headdress or between two scenes; all the while, maintaining the information associated with that specific headdress type. At the same time, the variation between headdresses demonstrates that artists had knowledge of and required distinct identifying symbols that could be associated with specific motifs within a scene. The choice of artists to paint a motif with one specific headdress and another motif with a distinctly different headdress suggests that different information was associated with each headdress type. As Warner (1958:294) explained, performers created specific types of headdresses from prescribed material. Similarly, artists painted specific types of headdresses because information was associated with each type and by depicting a motif wearing that specific headdress this information is overtly linked to that motif. In this way, variation between headdresses and variation within headdress types indicated subtle and overt aspects of the performance in Dynamic Figure art.

A further example of performance within Dynamic Figure art is the use of variation between headdresses within scenes, as Dynamic Figure artists would purposefully depict uniform or invariant headdress types, upon motifs within a scene. In Jabiluka, 18 (19%) scenes contained invariant headdresses and 23 (24%) had uniform headdresses (Section 8.3). In Johnston (2017), I argued that this variance or invariance was used by artists to depict the various roles and sameness or difference between motifs within a ritual performance. While this also relates to rule governance within ritual practice

(Section 9.6), it also indicates performance within a scene and the roles ritual participants performed. The invariance, marked by headdresses, is similarly to the ritual performances described in ethnographic accounts, e.g., the messenger compared to the male Sea Gull (Warner 1958:292,293). The level of distinction, via headdresses, present in Dynamic Figure art is significant, as perhaps uniquely, scenes indicate various levels of cultural status or initiation and ritual leaders and followers through this material culture type.

In summary, I argue that the headdresses of Dynamic Figure art were explicitly used to indicate aspects of the performance of ritual. Moreover, the subtle and overt use of headdresses, observed in historical ethnographic records of ritual and ritual performance, is also present in Dynamic Figure scenes, suggesting that artists not only painted aspects of performance in scenes but thought that performance was a significant attribute worthy of inclusion in Dynamic Figure art production.

### 9.8.2 Performance in Dynamic Figure scenes

In northern Australia, formal dance is a significant component of ritual performances (Keen 2008; 1994; Tamisari 2005:49). Keen (2008:70; 1994) argued that three forms of dance performance are typical, he observed that:

> Women and girls dance in one spot, lifting their feet to the rhythm of the clapsticks while hand movements relate to the topic of the song. Men and boys dance in an arena in front of the singers, generally moving towards the singers in dance. In some ceremonies… the dances are peripatetic, movement through the camp representing the movement of protagonists in the related myth (e.g. a journey to the land of the dead in the Morning Star ceremony of the Djambarrpuyngu group). Keen (2008:70-71)

Keen (2008) argued that it is during these performances that individuals learn these dances but also aspects of ritual practice e.g. designs, songs, names and pathways of ancestral beings (see also Morphy 1991). The narrative scenes of Dynamic Figure art contain indications of performance and dance through the use of perspective, space within scenes and motif placement. In northern Australia, many artists have used various techniques to imply that motifs in a scene were acting in a three-dimensional space, despite their two-dimensional rock surface (see May and Domingo Sanz 2010).

However, in western Arnhem Land this attribute of rock art scenes is first observed in Dynamic Figure art (Brandl 1988:172). I have already presented various scenes that have some examples of these performance indicators, which I will address below, and then I will examine a further scene that contains several of these indicators of performance.

In rule governance (Section 9.6), Figure 9.17 depicts a row of motifs divided by their sex. While this scene indicates the appropriate roles for participants during the ritual, it also depicts the performance aspect of that ritual. As noted, it depicts participants in positions reminiscent of ritual performances and each of the female motifs is depicted facing the same direction and in the same pose — likely dancing. In fact, the scene appears to be a depiction of a ritual performance.

In sacral symbolism (Section 9.7), Figure 9.20 depicts motifs spaced around a central macropod therianthrope. Each motif is dressed in ritual attire, including headdresses and pubic skirts, and is carefully placed around the therianthrope to encircle it. Although the motifs appear not to be dancing, the mimicking of a hunting or war party and the encircling of sacred objects and ancestor spirits has been recorded in ethnographic ritual performances (Berndt 1951a:161; Lewis 1988:190, Figure 36). This scene is less overtly a ritual performance depicting dancers; however, after an examination of the participants, their position and material culture it also appears to depict a ritual performance.

Figure 9.23 is a scene depicting seven motifs, three human figures and four therianthropes, although one is now largely faded. Unlike the previous scenes it is harder to liken it to a specific ritual performance — although not impossible — but I have chosen it because it contains a breadth of indicators of performance and likely indicates the significance Dynamic Figure artists placed upon performance in their art production. In this scene, the three human figure motifs are moving in one direction; however, the central motif is smaller than the other two, also implied by its smaller yet identical headdress. This use of different sized attributes implies that the human figure motifs are at different distances from the viewer. This implication is enhanced by the larger flanking motifs running upon a lower implied ground surface, overall creating different perspectives within the scene (see also May and Domingo Sanz 2010:38). The therianthrope that runs behind the motif appears to be on the same level as the middle motif. The final three therianthropes are depicted above the other motifs and smaller

again, adding another layer of perspective to the scene. In this scene, the Dynamic Figure artist has used different sized motifs, space between motifs and perspectives to create an implied three-dimensional space which represents how observers would see a real-life ritual performance. Another example of Dynamic Figure artists using these techniques to indicate performance space was recorded by Brandl (1998:36, Figure 73) at Mt Gilruth.


*Figure 9.23. Traced reproduction of scene I30175:82, an example where the artist has employed various techniques to depict performance within the scene.*

A further suggestion of performance within Dynamic Figure art are the scene action indicators. In Section 8.5, I described the scene action indicators present in Jabiluka and noted they were recorded in 17 (17%) scenes and more often associated with therianthropes. These indicators variously convey a sense of action within a scene, blood or sweat streaming from a motif's body, a shout during an activity or the potential power associated with a ritual (Chippindale et al. 2001; Taçon and Chippindale 2001a).

Although, not directly related to performance they demonstrate that Dynamic Figure artists imbued within scenes a sense of narrative time, suggesting that each pose of a motif was chosen to indicate an action or performance.

In summary, Dynamic Figure artists painted material culture specific to ritual performances, which has parallels to ethnographically recorded ritual performances in northern Australia. As well, artists specifically employed techniques to imply aspects of real-life performance in scenes, indicating that ritual performance is present within Dynamic Figure art and that artists thought it significant to include within their art production.

### 9.9. Conclusion

I have argued that Dynamic Figure art possesses each of the indicators of ritual practice stipulated by Ross (2003) and Bell (1997). I have also shown how Dynamic Figure art conforms to the attributes of ritual identified by Rappaport (1999). The presence of these indicators relates directly to my key research question as it demonstrates that Dynamic Figure art was most likely related to ritual practice at its time of production. Each of the indicators discussed also contribute to answering the secondary research questions, specifically: how the placement of Dynamic Figure art indicates areas associated with ritual practice in the wider cultural landscape; how individual Dynamic Figure motifs are associated with ritual and the roles of headdresses as ritual material culture; and how the narrative scenes of Dynamic Figure art provide evidence for actual ritual, illustrated by their parallels to ethnographically recorded ritual performances. This chapter has discussed many of the insights of past ritual behaviours in western Arnhem Land which can be discerned from Dynamic Figure art and in the next chapter, I will consider this further by exploring the degrees of significance of specific ritual practice indictors in Dynamic Figure art.

# Chapter 10: Ritual during the Dynamic Figure period

> *If ritual is a method of communicating information, it is logical that the practice will adopt forms or objects that can communicate such information. Rock art therefore, provides an ideal database from which to investigate ritual behaviour in the past.*
>
> June Ross (2003:295)

## 10.1 Introduction

This chapter expands upon the previous discussion of ritual practice by exploring the subsidiary research questions: what do Dynamic Places indicate about the wider cultural landscape? What insights concerning ritual behaviour can we gain from the study of Dynamic Figure motifs and does Dynamic Figure art provide us with an understanding of actual (as opposed to imagined) ritual in the past? The previous chapter's discussion was framed around ritual indicators within Dynamic Figure art; while here, the discussion is focused directly upon some prominent attributes of Dynamic Figure art. It is these prominent attributes that address the subsidiary research questions concerning: landscapes, motifs and actual ritual practice. To do this, I consider these attributes as degrees of significance of ritual practice - their prominence is read as indicative of the form and appearance (cover) of ritual practice during the Dynamic Figure art period (e.g., Stanner 1959:110; see Chapter 4). This analysis was only possible once the presence of each ritual indicator was established (Rappaport 1999:26; Ross and Davidson 2006:312-313). Below, I explore how Dynamic Places may have formed and what this might suggest about past lifeways during the Dynamic Figure art period. Second, I discuss the iconography of Dynamic Figure art and the mechanisms which have been associated with figurative iconographic systems in northern Australia and appear to be present in Dynamic Figure art. Finally, I consider what insights Dynamic Figure art has for the lifeways of women and the use of headdresses during the Dynamic Figure art period.

## 10.2. Dynamic Places

In Section 9.3, I provide evidence that Dynamic Figure art was produced at specialized ritual places, Dynamic Places. Dynamic Places are clusters of sites where shelters contained both more instances of art production and evidence that artists spent more time painting there than elsewhere in the landscape. In this section, I further investigate the attributes of Dynamic Places and explore how they may have developed over time. This discussion provides insights into how ritual practice was conducted, rock art production during and after the Dynamic Figure art period and demonstrates how Dynamic Figure art contributed to the ritual landscape of Jabiluka.

### 10.2.1 Defining Dynamic Places

Comparing the entire rock art assemblage of Jabiluka to the attributes of Dynamic Places suggests that Dynamic Figure art production was associated with larger sites and possibly connected with quarrying raw materials. Although, it cannot be absolutely determined if people were quarrying these sites during the period of Dynamic Figure art production, the density of art at these sites supports this possibility.

The rock art sites recorded in Jabiluka were classified into three sizes: small (1-5m), medium (5-20m), and large (20m+), according to the area available for artists to create rock art. Sites containing Dynamic Figure art were recorded in approximately even proportions between small (n=15, 37.5%), medium (n=14, 35%) and large (n=11, 27.5%) classifications (see Table 6.4). This suggests that a site's size did not explicitly prohibit a painter from choosing it for Dynamic Figure art production. Figure 6.10 illustrated the location of Dynamic Figure art sites labelled by these site size classifications. The map indicated that larger sites in the Djawumbu-Madjawarrnja rock formation were recorded interspersed with medium and smaller ones. Outside this rock formation, the Dynamic Figure art sites were recorded as either medium or small sites. Unsurprisingly, the clusters of large sites with Dynamic Figure art correspond with the Dynamic Places of Jabiluka (see Figure 9.1). This suggests that Dynamic Figure artists would to some extent focused their art production around large art sites.

Table 6.6 listed the number of scenes and individual motifs recorded at each site size. This table is a representation of instances of art production, i.e. an indicator of how often artists painted at a site, and how much time was spent painting at each site, i.e. how many motifs per site. Larger sites (n=57, 57%) were more likely to contain a greater number of scenes than medium (n=19, 19%) or small sites (n=24, 24%).

Similarly, larger sites (n=157, 63%) contained more individual Dynamic Figure motifs compared to medium (n=39, 16%), or small sites (n=55, 22%). It could follow that, as larger sites are more likely to have more available space for painting, artists more often chose these sites for art production. This is quite a simple interpretation, although it is not inconceivable. However, this interpretation does not account for the clustering of Dynamic Figure art sites at the Dynamic Places in the landscape or the overall rarity of large rock art sites in Jabiluka. Figure 6.9 mapped all the rock art sites recorded in Jabiluka classified by their site size and it demonstrated that there are numerous large rock shelters across the study area that were not chosen for Dynamic Figure art production. Moreover, Table 6.7 is a count of all the rock art sites of Jabiluka classified into size and it showed that small sites were by far the most recorded, second were medium sites and the least were large sites — only 16% (n=80) of sites in Jabiluka were classified as large. These results contrast with Table 6.5, which showed even proportions of Dynamic Figure art production at all site size classifications, and in this table large site were slightly more represented than medium or small sites. In summary, larger sites were preferred for Dynamic Figure art production provided they were located within specific Dynamic Places in the landscape. The preference to paint at large sites may not be unique to Dynamic Figure art but it is not typical of the entire Jabiluka rock art assemblage. Large site selection is one of the choices or preferences of artists for Dynamic Figure art production. The implications of this choice are discussed below in Section 10.2.3.

Dynamic Figure art was recorded at five of the different rock art site types recorded in Jabiluka (Table 6.8). Rock shelters were the most frequent site type (n=24, 60%) and cave (n=2), exposed boulder (n=4), exposed panel (n=6) and quarry sites (n=4) were substantially fewer — between 5 and 15%. Rock shelters were also the most frequent rock art site type in the survey area (see Table 6.9). Following this, rock shelters had the highest count of Dynamic Figure scenes, (n=50, 50%), and individual motifs, (n=109, 40%). Exposed panel, exposed boulder and cave sites all had substantially fewer scenes and motifs than rock shelters. However, quarry sites had substantially more instances of Dynamic Figure art production and motifs than would be expected of four sites recorded (see Table 6.8, Table 6.10).

Quarry sites were defined as places that had significant evidence of raw material (often quartzite) mining, knapping and gathering. Sites where the edges or corners of rock surfaces had been knapped were not defined as quarries, but considered opportunistic

material gathering. Sixteen quarry sites were recorded in the Jabiluka survey area and four (25%) contained Dynamic Figure art (Table 6.8, Table 6.9). These four quarry sites contained 30 (30%) Dynamic Figure scenes and 85 (34%) Dynamic Figure motifs. Three of these sites were classified as large and the fourth medium (5-20m), although the site notes describe it as 'A long site on the edge of the western edge of the escarpment with an overhang on most of the length' (see Section 6.12). Figure 6.11 showed the location of all recorded quarry sites in the Jabiluka survey area with red points for sites also containing Dynamic Figure art. This map demonstrated that only specific quarries had evidence of Dynamic Figure art production, highlighting again that only specific sites were chosen for Dynamic Figure art production. As above, specific places within the landscape were preferred to paint Dynamic Figure art; however, the number of scenes and motifs at these quarry sites may suggest that these were preferred over other large sites in suitable places.

It cannot be ascertained the extent to which these quarry sites were exploited during the Dynamic Figure art period, if at all. Moreover, the assumption implicit in the argument above is that all quarry sites had the same possibility of exploitation as they do in the present, suitable rock for quarrying may have only been exposed after the Dynamic Figure period but before the present. However, quarry sites with Dynamic Figure art present could indicate exploitation during this period. Also, other quarry sites may have been exploited by Dynamic Figure artists, but these were not in the Dynamic Places of Jabiluka and, therefore, did not also warrant Dynamic Figure art production. Dynamic Places appear the most influential factor for the placement of rock art in the landscape. However, the instances of art production and time spent painting at quarry sites may suggest that artists preferred these sites over other rock shelters for art production in these places. A possible explanation for choosing these quarry sites is the accessibility of raw materials for use in ritual practice or for exchange at meetings or gatherings of people who did not have access to these resources, a practice that Chaloupka described in the ethnographic period (Chaloupka 1981:166-167).

In summary, Dynamic Figure artists preferred to paint at larger sites and possibly quarry sites. A key attribute of these larger sites may have been to facilitate more participants being present during art production, further supporting the argument that Dynamic Figure art indicates the presence of ritual practice.

### 10.2.2 Dynamic Places beyond Jabiluka

To further explore Dynamic Places, I developed a density map from Chaloupka's 1984(b) unpublished report, 'Rock art of the Arnhem Land plateau: paintings of the Dynamic Figures style'; this map reflected the time artists spent painting at each site (number of motifs). As Chaloupka defined scenes differently to myself, creating an 'instance of art production map' was not possible. Figure 6.12 showed the location of all Dynamic Figure sites and illustrated the distinct clusters of sites in certain areas, like Jabiluka. I suspect that the dearth of sites in the centre of the map is indicative of an absence of surveying, not necessarily an absence of Dynamic Figure art sites. Figure 6.13 is a density adjusted reproduction of Figure 6.12, where the number of motifs per site increased the point size. Figure 6.13 illustrated that certain areas in western Arnhem Land have substantially greater numbers of Dynamic Figure motifs than other areas. The largest points on this map from north to south are the Djawumbu-Madjawarrnja formation, the Djidbidjidbi formation and the Deaf Adder Creek area, which includes Mount Gilruth, in the far east of the map is a site at the Cadel River. In Djidbidjidbi and the Deaf Adder Creek area, numerous Dynamic Figure art sites have been recorded in dense clusters with numerous instances of art production (e.g., Brandl 1988; Chaloupka 1984; Lewis 1988).

As noted in Section 6.14, other regions of Kakadu, with numerous instances of rock art production and dense clusters of rock art sites, have few Dynamic Figures. Lewis (per. comm. 2014) has surveyed and recorded rock art sites in areas of Kakadu with few Dynamic Figures, for example: Ubirr (one scene), Cannon Hill (one scene) and 3-4km in both directions from Cahill's Crossing on the East Alligator River (one scene). While numerous rock art sites were recorded in these areas, minimal Dynamic Figure art (see also Lewis 1988). As shown in Figure 6.12, Chaloupka's Dynamic Figure report (1984b) suggests a similar spatial patterning, with numerous Dynamic Figure art sites at Deaf Adder Creek and Djidbidjidbi and few sites around the East Alligator River. Similarly, Jones (pers. comm. 2016) recorded very few Dynamic Figure art sites in the Red Lily area, which has huge densities of other rock art types, especially Mountford Figures (Jones and May 2017).

In summary, the conclusion that Dynamic Figures art was painted at Dynamic Places is supported by studies beyond Jabiluka, although further fieldwork and research is clearly needed.

### 10.2.3 The creation of Dynamic Places

Dynamic Places were among the locations at which formal ritual communication took place; however, it's worthwhile considering the effectiveness of Dynamic Places to communicate information and how these places may have contributed to group dynamics during the Dynamic Figure period. Bell (1997:139-141) argued that ritual formalism bolsters the effectiveness of the information communicated and unifies people to accept the communicated messages. Likewise, Rappaport (1999:50-51) argued that ritual places bounded communication to a physical space and ensured that people would not miss interactions or communications. At the beginning of a person's life the traditionalism associated with Dynamic Places, knowing that their ancestors had visited and painted there, would have established a place's significance. Through that person's life their connection to Dynamic Places would have been enforced and enhanced by repeated ritual visits, as well as conducting or observing art production. The people that accompanied these visits or those who were met at these places would have further enforced the significance of these locations by collectively acting appropriately and repeating certain actions, including art production. This process would also increase the overall instances of art production furthering the significance of the place, especially the tradition of painting there. This whole process would begin again by taking younger generations to these Dynamic Places for their first time. In her study, Ross (2003:251) also suggested this basic narrative for the increasing significance of ritual places over time. Two attributes of Dynamic Places that would have contributed to their effectiveness to communicate ritual messages also have possible implication for group dynamics at this time, the high location of these sites in the landscape and their size.

The correlation between Dynamic Figure art and prominent places in the landscape may have acted as a mechanism to mediate access to ritual messages and certain information in the Dynamic Figure period. In Jabiluka and elsewhere, Dynamic Places are often located at prominent rock formations, visible from great distances, that would have been observed by people walking through the landscape (e.g., Figure 9.2). It cannot be examined how individuals would have responded to these places in the landscape outside times of art production; however, either through personal experience or by having knowledge passed onto them, an individual would have been aware of these Dynamic Places and could have actively viewed or avoided them depending upon the appropriate cultural protocols. Individuals visiting these places would have furthered

their relationship with the ritual information they contained. To the informed observer, Dynamic Figure art visitation could have reminded them of the ritual information these places contained as well as the association between these places and ritual practice; ultimately, reinforcing their initiated status within a group and connection to restricted and unrestricted information (see Ross and Davidson 2006:313). Inversely, to individuals avoiding these places, their lack of visitation and secrecy would bolster the significance of the cultural knowledge associated with these places, enforcing rule governance structures and the social hierarchies within their group (see Morphy 1991:92).

Garde's investigation of ritual practice at Gunbalanya (Oenpelli), approximately 30km from Jabiluka, demonstrated how location is significant to ritual practice in contemporary northern Australia (also see May et al. 2017a). Garde (2011:410) argued that the language used around ritual practice suggests that they were conducted at elevated specialised places in the landscape:

> This longstanding tradition is reflected even today — if not geographically, then linguistically — in the major regional ceremonies that have replaced the now defunct Wubarr, such as the Kunabibi and Yabbadurruwa. To enter the restricted men's ceremonial ground from outside, one says figuratively in the Bininj Gunwok dialects of Western Arnhem Land, nga-bidbun — 'I'm going up' — regardless of whether the speaker will ascend, descend or walk across a flat area to get to the ceremony ground.

It cannot be determined if the tradition he observed relates back to the Dynamic Figure period; however, the Dynamic Places in Jabiluka were recorded in high shelters above the valley floor (see Figure 6.3). It seems unlikely that entire rituals were conducted in the rock shelters of Dynamic Places if the areas noted for ethnographically recorded ritual practice are anything to go by (e.g., Chaloupka 1981); however, it is possible. More likely, is that only certain parts of a ritual were conducted in these shelters or art production occurred before and/or after the formal ritual performance. In this scenario, much of the ritual may have taken place on the valley floor directly below but 'in' these Dynamic Places. While the actual process cannot be known, from my analysis of the Dynamic Figure art of Jabiluka this is my reasoned speculation (see Bahn 2002). In summary, it appears that Dynamic Places are associated with high places in the landscape and ritual practice.

Dynamic Figure painters preferentially choosing large sites for art production also has implications for group dynamics and could suggest that art production at this time was a public undertaking. That is, Dynamic Figure art was produced in a space that could easily accommodate some or many participants or observers. A further possibility is that rock art production directly contributed to the performance of ritual practice (e.g., Bell 1997: 159-160). In this scenario, before or after the ritual performance the Dynamic Figure artist would paint a scene reminiscent of the dance that had just or would witness. Tamisari (2005:49) argued that in contemporary Yolngu society (east Arnhem Land) '…dancing is one of the most effective ways of claiming, affirming and legitimizing one's knowledge and authority in ceremonial contexts'; potentially, during the Dynamic Figure period painting these performances played a similar but parallel role, demonstrating the knowledge of the rock painter. It is for this reason that the specific details, such as accurately painting headdress variation and the poses and placement of Dynamic Figure motifs in space, would have been critically important to demonstrate the painter's knowledge and authority of ritual. However, for this demonstration of knowledge and authority to be effective a level of publicness would be required (see Morphy 1993:91-92) - other ritual participants observing the painting process or at the very least knowing where paintings were produced for observing at another time. Large sites, that are in prominent places within the landscape, would have contributed to this process for Dynamic Figure art and legitimized the knowledge and authority of painting Dynamic Figure art. A large site would facilitate groups of people gathering to view and engage with the scene being painted or groups of people observing it later - potentially small and medium panels could be visited discreetly either by leaving individuals at the larger area and taking certain people to observe the scenes at those sites. In this scenario, the group of people present at the large site may have been a family group(s) or a selected group of people related to each other by their association with a specific ritual. Thus, Dynamic Places were created as artists painted in places associated with knowledge and authority at the same time enforcing their status within their group.

The connections between rock art and mythology in western Arnhem Land have been noted in detail elsewhere in this thesis (Chapter 4; see also Chaloupka 1981:164; Chippindale et al. 2000; Taçon & Chippindale 2001a; Taçon et al. 1996), as has the connection between body painting and ritual (e.g., Berndt 1951a; Morphy 1991); however, whether painting was conducted as part of ritual practice, as described above, has not been explicitly recorded in the ethnographic period in this region to my

knowledge (but see Layton 2006; Fuglestvedt 2010; Goldhahn 2008; Whitley 2006; AIATSIS Edwards.R01.CS and Quest under Capricorn: Desert Gods for examples of a very similar process in Central Australia). Chaloupka, in his account of the Badmardi family's yearly walking route, described examples of the publicness of certain rock art production that has parallels with the scenarios described above (Chaloupka 1981). Chaloupka described how certain places in the landscape were associated with ritual practice and that '…hundreds of people from near and far congregated there [South Alligator River wetlands] at the time [Gunumelung, the time of the first storms] and major ceremonies were held' (Chaloupka 1981:170). This was one of three places noted for ritual practice, although more may have existed, that were visited by the Badmardi family on their yearly walking route (Chaloupka 1981:164,168,170). In a later unconnected event Chaloupka described how, '…there the father painted a large representation of Nawaran, the rock python whom they had killed and eaten on the last day of their journey' (Chaloupka 1981:170; see also Mulvaney 1996). This painting episode was unconnected to the ritual that the family had attended earlier in the year; however, it highlights how rock painters could be responsive to events.

As I have argued in Chapter 9, Dynamic Figure art has all the attributes of ritual practice; therefore, was most likely produced in the context of ritual, possible as part of the formal ritual performance. While, I cannot empirically demonstrate that Dynamic Figure artists painted scenes of ritual practice before, after or during ritual; the presence of Dynamic Places in the landscape and the subject matter depicted supports this possibility. According to this argument, Dynamic Places were created by artists returning to large sites, or to medium and smaller sites in their immediate vicinity, to paint scenes of ritual performance as part of their ritual practice. As Chaloupka described, in recent times people gathered at certain places and at certain times of year to conduct rituals (Chaloupka 1981:164,168,170); I argue that it is likely that Dynamic Places indicate where these ritual gatherings took place during the Dynamic Figure art period. Large sites may have been chosen as they allowed others to observe the art production which enhanced the status of the painter, this observation ether at the time of production and at a later stage, in which case prominent location in the landscape would have assisted this process. I do not think that all ritual activities, such as the formal dance performance, occurred in these shelters because the size would be limiting, but it is possible (see above). The ritual filmed in *Quest under Capricorn: Desert Gods* showed the men preparing themselves at the rock art site, then conducting the formal dance performance in an open area near the site and then returning to paint at the shelter

(see also AIATSIS EDWARDS.R01.CS). This order of events is just one possibility for rock art production within ritual practice.

The entire process described above, of artists returning to paint at Dynamic Place in association with ritual practice, is similar to one that Taçon (1994) described as *socialising the landscape* whereby painters created rock art in certain places to associate specific knowledge and symbols with those places in their landscape (Taçon 1994:118; see also McDonald 2012:226; Merlan 1989; Layton 2012; for international examples see e.g., Sognnes 1994). However, Taçon described this process within the context of regional art styles, art styles changing over time and thousands of years, but it appears that Dynamic Figure art and artists can demonstrate this process also simultaneously happening within an art style and possibly over a relatively short period (see also Taçon 1989a:358-359). The process through which ritual and painting socialises peoples' landscape is explored further in the next section.

### 10.2.4 Dynamic Figure art as an indicator of social boundaries

Broad geographic observations of Dynamic Figure art have been used to suggest possible explanations for social organisation from the late Pleistocene into the Holocene in northern Australia (e.g., Chaloupka 1993:106,133; Lewis 1988: Chapter 7); however, until now a tested geographic understanding of Dynamic Figure art was not established. In the final part of this section, I will consider the implications of Dynamic Places upon the population density model proposed by Lewis (1988: Chapter 7), which concerned decreasing territorial boundaries after estuarine incursion during the Pleistocene-Holocene transition in northern Australia.

Lewis (1988: Chapter 7) proposed a geographic model of rock art production in northern Australia related to regional styles, environmental change, population density and sea level rise between the Pleistocene and Holocene. Lewis (1988:89) argued that the distribution and homogeneity of Dynamic Figure art represented interrelated extended information networks of people, similar to contemporary arid zones south of Arnhem Land, and a period of 'relative social and cultural stability'. Lewis (1988:94) argued that:

> The extended information networks implied by the distribution of boomerang figures are likely to have persisted until sometime after 10,000 BP, when rainfall increased significantly and environmental conditions improved. As conditions improved,

> local populations would have increased until the existing system of social organisation, designed for a population thinly spread over a large area, could no longer function efficiently. At this point the societies reorganised and divided, perhaps along existing social divisions (e.g., clans), and formed viable social groups focused on smaller land areas with an increased emphasis on local identity.

Lewis (1988:95-98) drew upon studies of environmental change, hunter gather resource strategies and ethnography to consider how a rising sea level would have effected people's lifeways; in summary, smaller liveable areas for coastal groups would have forced people to migrate inland and caused stress and increased tension between themselves and the people who already lived inland (see also Veth 1999; Veth et al. 2000).

The presence and investigation of Dynamic Places supports aspects of this model as well as providing further insights into how art production may have related to changing conditions in northern Australia. While Dynamic Figure art may represent a long period of stability, it could also instead represent a short period on intense art production (e.g., Taçon 1989a:358-359). This contention is supported by the concise set of ritual indicators, especially recurring motifs and iconography, in Dynamic Figure art. This also inversely interprets homogeneity as fewer artists producing more paintings in their lifetime (e.g., Hasckovec & Sullivan 1989; May 2008; Taçon & Chippindale 2001b; Taylor 1996). Brandl (1988:174) also noted this interpretation of homogeneity, observing the similarities between specific Dynamic Figure motifs at Deaf Adder Creek; however, he appeared to have concluded the opposite and argued that Dynamic Figure are suggested a long period of 'stable' art production (Brandl 1988:174-176; see also Lewis 1988:88). Some ethnographic studies support the argument for fewer artists producing more paintings in their lifetime, as Haskovec and Sullivan (1989:62) argued, in Najombomi's lifetime he painted more than 46 sites, some 600 rock paintings and an area over 1800 $km^2$. Although circumstantial, the distinct similarities between the female motifs in Figure 10.1 (see also Figure 7.2 and Figure 9.5), especially their poses, may suggest that they are painted by the same or very closely related artists.

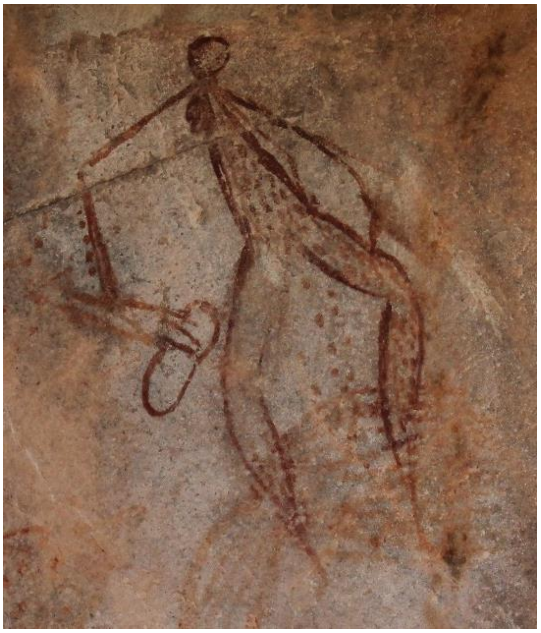


*Figure 10.1. Female Dynamic Figures painted in a very similar manner (above from Lewis, site 17; below I10034:10) (no scale included).*

If Dynamic Figure art represents a short period of intense art production, Dynamic Figure art and Dynamic Places may represent the responses of people and groups during these early stages of stress and the increased tensions that Lewis (1988:95-98) described. The growth of Dynamic Places represents the repetition of ritual practice, that was maintaining inter group dynamics and persisted until the lifeways they maintained were no longer effective (e.g., Lewis 1988:94,98-99). The ephemeral similarities between Dynamic Figure art and post-Dynamic Figures may have been the last vestals of this manner of art production (Figure 10.2; Chaloupka 1993:125), which were influenced by new material culture and the regional styles emerging in Arnhem Land after this time (Lewis 1988:94). It should be noted that there has been little research relating to 'post-Dynamic Figures' and the relationship between the two styles.

*Figure 10.2. Example of a post-Dynamic Figure recorded at Djidbidjidbi, note the similarities to the Dynamic Figure form and the hooked stick between the spears and the macropod (no scale included).*

Dynamic Places and the art they contained had lasting influence upon subsequent art production. This is most prevalent through the recurring presence of headdresses. In subsequent styles, Mountford Figures (Northern Running Figures), Simple Figures and Yam Figures, headdresses persist and are very prevalent but undergo a rationalisation, as fewer types are depicted (see also Chaloupka 1993a; Johnston 2017; Jones and May 2017*;* Lewis 1988; Taçon 1994:118). It is beyond this study, but a valuable investigation would be to examine how these regional styles were influenced by the Dynamic Places within their geographic bounds, specifically the headdresses depicted within them.

Taçon described the lasting impact that early rock art would have had on future rock artist and people travelling in the landscape (Taçon 1994). He wrote:

> As an area increasingly was marked and stamped with signs and other visual expressions of culture it became more and more integrated into a system that is neither fully natural nor cultural, rather a larger system that is a combination of both. This helped make a landscape more familiar culturally but it also transformed it into a set of places that are home or not home, restricted or not restricted, in or out of bounds, permissible to visit or not permissible unless there was some change of circumstance. (Taçon 1994:124-125)

Dynamic Figure art is not the earliest 'visual expressions of culture' available to people today; however, it is among the earliest sources that can be employed to examine peoples' complex ritual practices and lifeways. As I have argued (Section 9.4), the practice of painting over stencils showed that Dynamic Figure artists built upon and reacted to older art practices. Once Dynamic Figure artists began painting, their production was prolific as they returned to paint again and again at sites known to them, possibly where they had painted previously, in a process that transformed these shelters into their places. They painted the activities they conducted, participated in or observed and the material culture that was worn and carried during these activities. These activities and painting episodes may have been in response to new and different groups of people walking into and through the landscape and the need to mark places and times with cultural information and messages. If these transgressions of people happened quickly and over a short period, these painting episodes may have been frequent in order to transfer this information to these people. Painting in the Dynamic Figure style would have persisted until the makeup of people occupying these areas was different enough that new rock art forms were needed to stamp new identities and mark new activities. These new forms of rock art were highly influenced by the Dynamic Figure art that was already in this landscape as new artists maintained aspects of this older stylistic tradition.

If Dynamic Figure art is proven to be much older than the late Pleistocene, the explanation I have presented is still applicable. However, the significance of the environmental impetus may have been lesser and possibly other sorts of population or cultural factors prompted and grew Dynamic Places. The growth of Dynamic Places is also significant because we can be quite certain that artists where aware of previous works around the panel they chose. Therefore, their choice to paint in a similar or different manner provides insights about the ritual practice in which they participated. These choices are manifested as an observable iconographic system within Dynamic Figure art and is discussed in the following section.

### 10.3. Iconography in Dynamic Figure art

In the previous chapter, I argued that one can observe an iconographic system within the Dynamic Figures of Jabiluka and western Arnhem Land. In this section, I explore the components of this system observable in Jabiluka and the insights they have about the

artists who painted them; specifically, the presence of overt and covert ritual information within Dynamic Figure art.

### 10.3.1 Iconography in rock art

In relation to rock art, Layton defined iconography as:

> … the study of specific elements of meaning: foot shape, the placement of fins, the design of a head-dress and so forth … Elements of iconography constitute units of meaning in a system of opposed units where the substitution of alternative elements would convey a different meaning, the shape of a foot (or footprint) denotes human, kangaroo, possum or emu; the shape and position of fins identifies which species of fish is depicted. (Layton 1992:86)

This is a definition developed from semiology, the study signs and symbols (Layton 1992:86-87). Understanding the complete and specific meanings and the relationship between signified and signifier is only possible to an initiated person of the producing culture and society (see Merlan 1989:14; Morphy 1999:14; Mulvaney 1996:19; Layton 1992:86-87, 2012:444; Taylor 1996); however, it is possible to examine repeated motifs and explore aspects of an iconographic systems in the past (Merlan 1989:14-15); for example, the Rainbow Serpent or the Lightning Man in west Arnhem Land (see Brandl 1988; Taçon 1989a,1994; Taçon et al. 1996).

Morphy described how iconography in bark paintings, and more broadly art, is linked to ritual in contemporary Yolngu society (see also Layton 2012:444). He explained that paintings consist of 'chunks' of ancestral law and mythological information associated with significant places within a clan's Country (Morphy 1984, 1991:101). He argued:

> …although the chunks exist independent of ceremony as the foundations of the clan's existence, they have to be performed in order to be known. In other words they have to be used in ceremonies. (Morphy 1991:101)

As argued, Dynamic Figure art is associated with ritual practice and its highly figurative form suggests that it may be possible to examine aspects of these 'chunks' and to gain insight into ritual practice during the Dynamic Figure period. Importantly, I am not implying that a scene with a thylacine demonstrates that people conducted rituals

concerning thylacines and that that ritual is accurately depicted in its entirety in a shelter. What can be determined from Dynamic Figure art are boarder inferences about ritual practice at this time; for instance, the sex of macropods was likely significant to ritual messages as Dynamic Figure artists specifically define macropods as male or female or that stories thylacines likely featured in ritual practice (see section 8.4; Figure 8.7).

Similarly, the prevalence of tracks or faunal foot prints within Dynamic Figure scenes may provide insights into ritual practice (e.g., Figure 10.3). Of the fifteen scenes that depicted manifestations of fauna, five occasions were tracks. Like the sex of macropods, tracks were observed to be distinctly different either one, two or three toed. In arid central Australia, Layton associated the significance and prevalence of foot print or track motifs with tracking and hunting, an '…essential element in reading the meaningful environment' (Layton 1992:58). He rationalised this as emu tracks often lead to water as they need to drink more than other fauna of the region; while the freshness of a macropod track told the hunter 'the value of chasing that game' (Layton 1992:58). This is a very linear and functional interpretation of track motifs; although not without some merit as Dynamic Figure art is associated with a more arid environment (see Section 10.2). At the very least, the depiction and demarcation of track motifs suggests that tracks constitute a significant element within the faunal ritual information of Dynamic Figure art; a situation that does not appear to continue in the subsequent periods of rock art production (see Chaloupka 1993a). More broadly, while human figure motifs form the majority of Dynamic Figure art production and messages; fauna and tracks had significant roles in past communication and Dynamic Figure art iconography, and likely the rituals conducted during the Dynamic Figure period.

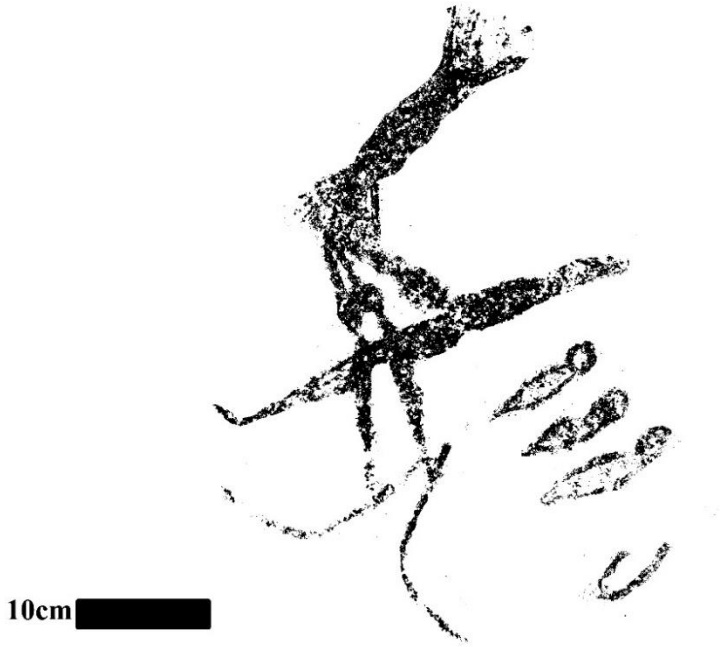



*Figure 10.3. Traced reproduction of scene I30172:80, a motif in motion with boomerangs with four tracks or foot prints below it.*

In the previous chapter, I discussed examples of invariant motifs and scenes that are most easily identified as constituting part of the Dynamic Figure iconography (Sections 9.5 and 9.7). These recurring motifs are 'chunks' of information that were used within scenes and that likely had specific information associated with them. Ethnographic sources (e.g. Layton 2012; cf. Dobrez 2012) suggest that this information would have been known to informed observers and passed on through shared understandings and experiences of the world (Layton 2012:444). Examining one scene of therianthropes from Jabiluka demonstrates how Dynamic Figure artists may have used these 'chunks' of information in different scenes and in their art production. As noted, specific Dynamic Figure therianthrope types, with associated material culture and forms, exist in western Arnhem Land (section 9.7; see also Taçon and Chippindale 2001a). In Jabiluka, one of the most recognisable therianthropes was type 2, recorded upon three occasions: I10049:35:3; I10034:70:2; I10046:76:1 (see Figure 8.9; Figure 9.13c; Figure 10.4). What is significant about these three depictions is that the narrative of the scenes is distinctly different – the therianthropes are not depicted undertaking a similar activity. In Figure 8.9 the narrative appears to be related to violence and in Figure 9.13c the therianthrope is part of a band of human figures running together.


*Figure 10.4. Traced reproduction of scene I10046:76, note the combined leg form of the left motif and superimposed legs of faded Dynamic Figure above.*

In Figure 10.4, the type 2 therianthrope is engaged in discourse with another therianthrope. In this scene, the type 2 therianthrope also exhibits the combined leg form and both have more arm definition than other typical therianthropes (see Chapter 7). Through its various use in these scenes, this therianthrope demonstrates how one 'chunk' of mythological information can be transferred and reemployed by artists in various narratives, highlighting how the Dynamic Figure iconographic system was employed by artists. Its repetition in different narratives suggests an association with different mythological stories but also the complexity of the stories; in Figure 10.4 no human figure motifs are depicted suggesting that the associated ritual information of this scene is among the least connected to human figures or human beings.

Figure 10.4 also highlights a potential further sophistication of Dynamic Figure art; observed in contemporary art production in northern Australia, where knowledge is restricted and only accessed through processes of initiation (Layton 2012; Morphy 1991,1999; Taylor 1996). Morphy (1999:15) described the process vividly through narrating a hypothetical man's life and his growing understanding of a single motif, a circle with two parallel lines inside an oval. The motif is understood over time as a place, a story and an explanation of the creation of parts of the landscape, with much of this information learnt during ritual (Morphy 1991,1999:15). Within this framework,

Morphy (1999:18) suggested that figurative art maybe used quite flexibly by artists for their intended communications. While a direct meaning may be clear to any relatively informed observer of that artistic tradition, specific information embedded within art maybe restricted to certain informed senior members (Morphy 1999:18). This flexibility is potentially present in Dynamic Figure scenes such as Figure 10.4, where the activity is not overtly clear or revealing to the uninformed; however, the two therianthrope motifs and specifically their head types may have had layers of associated information. In Jabiluka, Dynamic Figure scenes were more often depicted in unrevealing activities, such as 'in motion with or without weapons' (36%, n=35 and 15%, n=15) or 'stationary' (16%, n=16). In these scenes, specific attributes may have indicated information to initiated observers and added to the complexity of the message communicated, these attributes may have been the scene action indicators (Section 8.5) or headdresses (Section 8.3; see also Johnston 2017). It is likely that headdresses played the most significant role in this signalling because of their ubiquity and variation compared to other attributes of Dynamic Figure art. In this way, the two running motifs in Figure 10.5 may have contained as complex a message as many motifs interacting in a circle around a therianthrope (e.g., Figure 9.20).

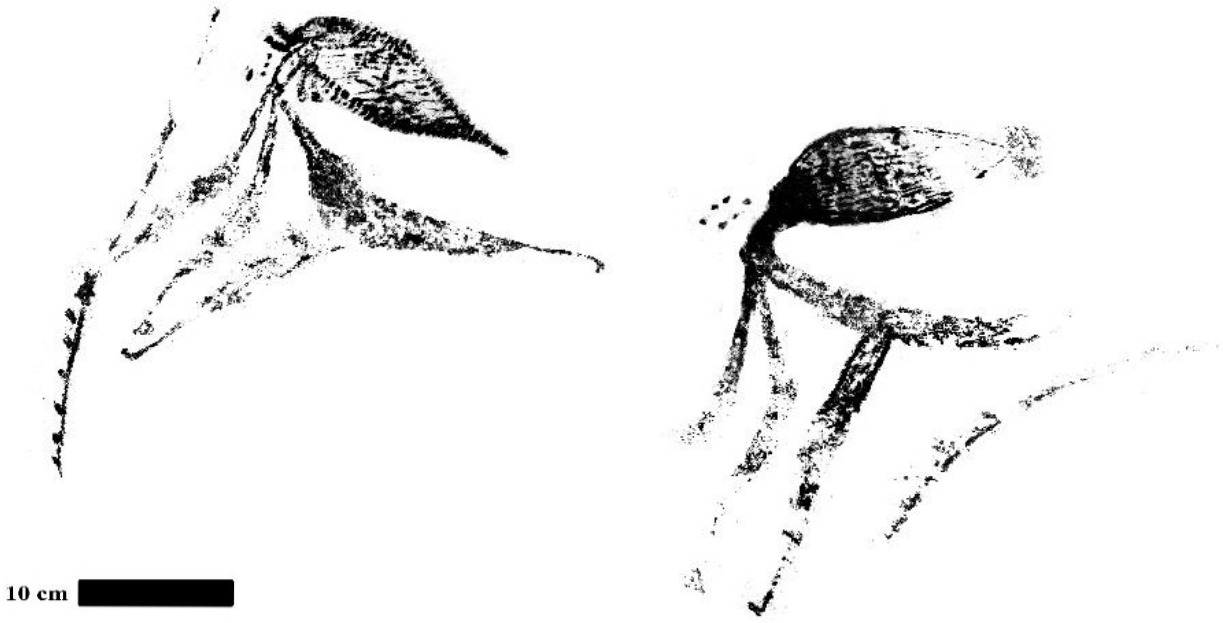



*Figure 10.5. Traced reproduction of scene I30143:37, showing two motifs in motion with weapons.*

### 10.3.2 Iconography as a ritual mechanism

Encoding information within scenes could have been a valuable mechanism to maintain hierarchies and rule governance during ritual practice and to manage or restrict ritual information contained within Dynamic Figure art. More broadly, this encoding mechanism could have maintained social dynamics and hierarchies during the Dynamic Figure art period. As Morphy (1999:15) described, a group of people could visit a site and, depending upon their level of initiation, they would understand more or less about the rock art depicted and in this space. The more knowledgeable individual(s) could distribute this information when appropriate. Dynamic Figure scenes with more complex and clearer narrative indicators would have been easier for anyone to understand (e.g., Layton 2012:444) while scenes with fewer indicators and a less clear narrative would need to be interpreted by the initiated individuals (e.g., Morphy 1999:15). However, I suspect that a dichotomy as this did not exist and all scenes would have been most understood by initiated individuals, as they could have comprehended more information from each scene (see Morphy 1999:15; Layton 2012:444; cf. Dobrez 2012). This process could have acted as a mechanism to support the hierarchies present in society, where those who had been initiated to information would pass it on at appropriate ritual occasions, validating their status. This process could have happened at and would have been facilitated by the large Dynamic Places described in Section 10.2. In this way, Dynamic Figure art created during ritual production and upon later visitation could have enforced the significance of ritual, ritual information and maintained the status of the people and society which created it (see also Ross and Davidson 2006:313).

In this section and Section 10.2, I have argued that there appears to be elements of continuity from the period of Dynamic Figure art production to contemporary art practices in northern Australia. In doing so, I have presented evidence that suggests many of the mechanisms concerning ritual information recorded by recent anthropologists are present in Dynamic Figure art. By employing ethnographic analogy, I explored possible attributes of Dynamic Figure art that have parallels in contemporary and ethnographically recorded art practice. These parallels and certain similarities suggest that the ways of learning about, understanding and *using* art in the present may have existed in the distant past. The mechanisms through which information was passed on about art, ritual practice, and how art could have acted to maintain social dynamics

in western Arnhem Land may have an archaeologically 'observable' genesis in Dynamic Figure art.

## 10.4. People and material culture in the Dynamic Figure period

In this last section, I further consider how Dynamic Figure art provides insights into the reality of the everyday circumstances and actual ritual practice of people during its period of production, and through this discussion examine further aspects of continuity and discontinuity in west Arnhem Land rock art production. In the introduction (Section 1.2), I described what I understand to be the distinction between the rock art and excavated archaeological records; the former concerns how people saw themselves and their world while the later concerns what they did in it. The almost total absence of lithics, hafted or not, in Dynamic Figure art is a telling example this dichotomy (Johnston 2017). I also noted that, I do not believe it is possible to know exactly what people did in the past using the rock art record; rock art does not constitute a facsimile of a specific past activity but is a representation from the minds of artists (see Section 9.2). However, attributes of Dynamic Figure art provide insights into aspects of the lives of the people who painted these scenes and the activities in which they engaged. Two areas where these attributes can be fruitfully investigated are the depiction of males and females in Dynamic Figure art, or the supposed underrepresentation of females, and the conventions used when depicting material culture.

### 10.4.1 Female motifs in Dynamic Figure art

Hays-Gilpin (2012:201) argued that rock art is a valuable source to examine sex, gender and the lifeways of men and women in past societies (see also Goldhahn and Fuglestvedt 2012; Hays-Gilpin 2004; McDonald 2012; Smith 1991). She argued that unlike other material culture objects, which have interpreted genders or sex associations placed upon them by people in the present (e.g. knives), rock art can have clear indications of sex association embedded within it from the point of view of the maker (Hays-Gilpin 2012:200-201; Goldhahn and Fuglestvedt 2012:243). E.g., Does this human figure have male or female genitalia? Are the objects that they are depicted with only associated with male or female motifs? Within the context of this study, sex is considered a dichotomy, male or female, and is defined by the body's organs; however, I acknowledge that it is not actually this simple (see Dowson 2001; Engelstad 2001; Hays-Gilpin 2012:201-202). Following Hays-Gilpin, 'gender refers to cultural values inscribed on sex' (Hays-Gilpin 2012:202); that is, how people think, treat and interact

with other people because of their perceived sex. While, interpreting a particular human figure as male or female from the parts of their body maybe relatively easy in Dynamic Figure art (e.g., Figure 10.1), these motifs are the products of the people who painted them and their understanding of the world, they are not an objective representation of that world. It is from this starting point that aspects of material culture, activities and their association with specific sexes, or lack thereof, should be investigated in a considered critical manner.

In Australia, McDonald argued that many researchers have found sex motif classes valuable for investigating rock art and 'stylistic variability' (McDonald 2012:216; e.g., Bullen 1991; Drew 1995; Franklin 1984). In Chapter 7, I presented evidence that 11% (n=23) of Dynamic Figure motifs are explicitly depicted as female, based upon artists depicting breasts and sometimes a defined pubic bump (Section 7.3, see also Figure 7.2). In contrast, no motifs were defined explicitly as male in Jabiluka - male defined as a human figure depicted with a penis or phallus. Early researchers have assumed that all Dynamic Figure motifs not depicted with breasts must be male (e.g., Brandl 1988:167; Chaloupka 1993a:112); this despite, Chaloupka (1993a:112) only observing rare examples of Dynamic Figure human figure motifs depicted with penises. This recording convention and interpretation is not unique to Australia and has been heavily critiqued elsewhere and researchers have argued that this approach does not reflect what is present on a rock panel but reflects how the recorder (read male archaeologist) interprets gender and the past (Engelstad 2001; Goldhahn and Fuglestvedt 2012). However, Brandl explained that, according to Spider Murululmi, the breasts must be depicted on a female motif; therefore, all non-breasted figures are male (Brandl 1988:173). Similarly, Chaloupka explained that the convention of depicting women with breasts is how 'Aborigines identify a female's age'; small, medium and large breasts indicating pubescent girls, young women and older women respectively (Chaloupka 1993a:115). Who revealed this information to him was not divulged, and it appears that this is the justification for human figures without breasts being interpreted as male.

One hair adornment recorded in Jabiluka provides a useful counter point to this discussion, as the 'fuzzy' hair form (Figure 10.6, see also Figure 10.7) was recorded on female motifs as well as motifs not defined as male or female by sexual dimorphism. This form of headdresses or hair adornment is circular, sometimes with 'fuzzed' strokes, and has two lines coming up from the neck of the motif into its centre. Zero

female motifs were recorded wearing headdresses in Jabiluka, another traditional way of defining males in Dynamic Figure art (e.g. Chaloupka 1993a:106), and only one instance of a female wearing a headdress has been recorded by Chaloupka (1984:326, Site 184). Similarly, zero female motifs were recorded carrying boomerangs another traditional male/female indicator (Chaloupka 1993a:106); however, some non-sexed fuzzy hair motifs do carry boomerangs (e.g., Figure 10.6). The 'fuzzy' hair adornment highlights that these observations about male or female material culture are not necessarily binary truths and that for artists the sex of a motif may not have been overly important in many of the ritual messages they wished to communicate. Instead, potentially ambiguity was purposefully part of the scene and the sex of motifs was only depicted when necessary.

*Figure 10.6. Traced reproduction of scene I30030:54, two motifs in motion with the fuzzy headdress or hair adornment (no scale).*

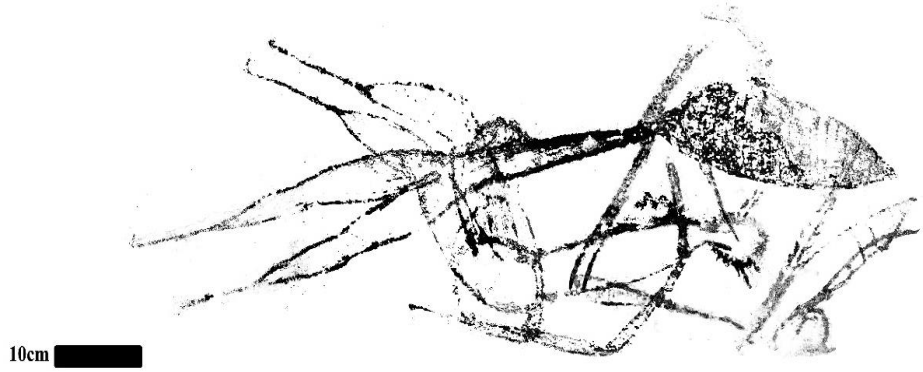



*Figure 10.7. Traced reproduction of scene I30173:15, note the skirt at the female motif's waist.*

I believe that we do not yet have enough information to draw the conclusion that no breasts equate to male, and further research is needed to better understand if artists were using other signs to indicate male or female sex in Dynamic Figure art – if maleness should be assumed of all motifs why is the penis depicted at all? As Hays-Gilpin (2012:200) argued, one should not interpret non-sexed human figures in rock art as one sex or the other and this is especially true if, like in Dynamic Figure art, artists did distinguish between males and females by features of sexual dimorphism in certain circumstances. Following this, in this section I only focus upon motifs that were explicitly depicted as female, which indicates that the artist intended observers to know the sex of those motifs.

Dynamic Figure female motifs were depicted conducing 'complex activities'(n=10), 'in motion with weapons' (n=5); 'in motion without weapons' (n=3), 'sexual intercourse' (n=2) (e.g., Figure 10.7) and 'stationary' (n=1). In certain scenes, each motif was defined as female, for example Figure 10.8. In this scene two females are on their hands and knees and facing back to back, likely depicting two individuals mimicking each other but in reverse. I am unaware of an ethnographic example of two women engaged in such a pose during ritual practice and if one does exist it may be restricted to initiated women (see Berndt and Berndt 1977:180-187). However, poses like this are used in ritual performances in northern Australia. For example, Figure 10.9 was described as men mimicking a kangaroo during ritual (see Mountford 1949). There are further examples of female only scenes in Jabiluka. For instance, Figure 9.18, among the most narratively complex scenes in Jabiluka, depicts a female motif rubbing or touching the feet of another motif while others appear to dance (see Section 9.6). The absence of un-sex or male motifs in the scenes suggests that these activities of ritual practice are specific to females.

*Figure 10.8. Reproduction of scene I30067:17 (above) and a close up of motif I30067:17:1 (below) (no scale).*


*Figure 10.9. Following Mountford (1949:770): a row of men in invariant poses during a ritual performance.*

McDonald in her study of female human figure rock art from Murujuga, suggested that the 'intimacy of knowledge connected with women's reproductive cycles and processes' displayed in these depictions, could indicate that these motifs were made by women (Macdonald 2012:221). A similar situation appears to be present in Dynamic Figure art, where artists indicate intimate knowledge of women's bodies but also depicted in detail possible ritual practices they enacted. Depictions of women engaged in possible ritual practice is not unique to Dynamic Figure art; for instance, Gjerde (2010:128) proposed a possible interpretation a woman riding a reindeer as a female shaman in northern Europe (see also Goldhahn and Fuglestvedt 2012:246-247; Gjerde 2010:128; Macdonald 2012; Mandt 2001:300). The detail in which females are depicted engaging in ritual practice in Dynamic Figure art supports the argument that women had a significant role within actual rituals (e.g. Berndt and Berndt 1977:256, 261); despite conclusions drawn by some researchers of contemporary ritual practice (e.g., Warner 1958:387,394-398). Berndt and Berndt (1977:256, 261) argued that women are significant within the 'ritual sphere' in west Arnhem Land and that they had complimentary roles to men in ritual. They also conducted their own ritual practices. Dynamic Figure scenes such as Figure 9.18 and Figure 10.8 illustrate that this was likely true in the distant past as well, where groups of female motifs possible engage in ritual performances without male or non-sexed motifs. Other researchers, who have described ritual practices in detail (e.g., Meggitt 1966:195; Stanner 1959:115), ascribe a subsidiary role for women in ritual activities; however, this type of relationship between the sexes is not overtly depicted in Dynamic Figure art as there are certainly depictions of ritual performances with men and women together (e.g., Figure 9.17) and certain scenes indicate they females also interacted with mythological, therianthrope, beings (e.g., Figure 9.11). Depiction of females engaged in ritual practice in Dynamic Figure art further highlights aspects of continuity from west Arnhem Land's past to present.

As discussed in the previous chapter, the hair adornments of female motifs are employed in a similar manner to headdresses. That is, they mark distinct roles between individuals within a scene, likely relating to roles within ritual practice (Section 9.6.; see also Johnston 2017). Some of the hair adornment forms of female Dynamic Figure motifs in Jabiluka were recorded on multiple occasions (see Section 7.8). Figure 10.10 shows two of these hair adornment forms together, the single motifs on the left have the 'long hair' and 'plat' forms respectively, which are also depicted on the female motifs in the scene on the right. In this scene, a close up of Figure 9.17, only one of the motifs has 'long hair' while three have 'plaits', suggesting that the artist intended to distinguish

one motif from the other three. Her differentiation could represent the role she has within this ritual practice, Berndt and Berndt (1977:262) described this as the ritual division of labour. It is significant, that depicting this level of ritual practice detail, in relation to the role of females within these scenes, was important to Dynamic Figure artists. This further supports the argument that depicting specific attributes and details within scenes may have related to painters demonstrating their knowledge and authority of ritual practice (e.g. Section 10.2), but also the significant role women played within ritual practice at this time as these details were just as significant. These scenes, as well as the ones mentioned, provide indications to some of the ritual behaviours of women during the Dynamic Figure period and the how hair adornments were employed within Dynamic Figure art iconography.

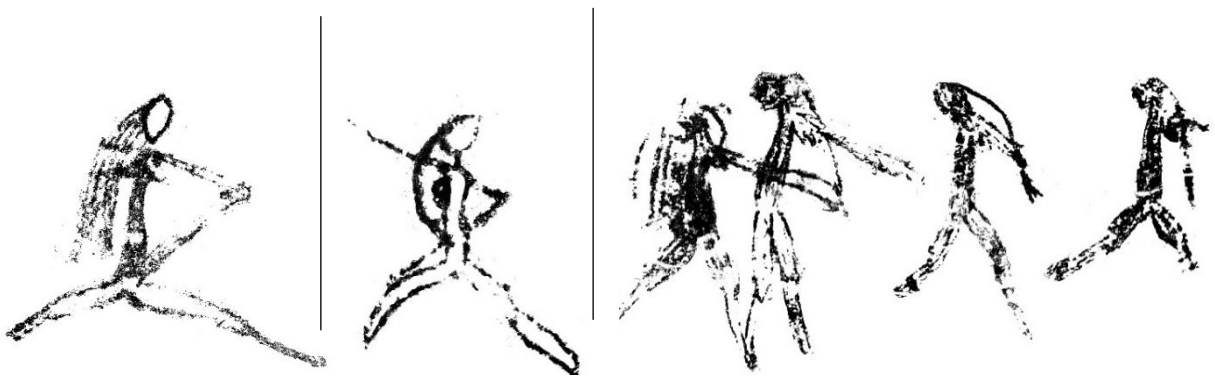


*Figure 10.10. Traced reproduction of motifs from scenes I10034:8:1; R10037:12:1 and I30030:18, showing repeated use of invariant hair adornments in Dynamic Figure female motifs (not to scale).*

In summary, female motifs in Dynamic Figure art were likely depicted conducting ritual pracitce and their hair adornments exhibited similar encoding mechanisms to the headdresses in other scenes. In these scenes, female motifs appear to have as significant a role to non-sexed human figures which could reflect the roles women had in actual ritual practice in the distant past. Moreover, certain scenes depict only females and may represent ritual activities in which only women took part during the Dynamic Figure period.

### 10.4.2 Headdress variation in Dynamic Figure period ritual

I have argued that headdresses and their variation are among the most significant attributes of Dynamic Figure art and provided the impetus and the ability to examine aspects of ritual practice in Dynamic Figure art (Section 9.3, Section 9.8; Johnston 2017). In Section 10.3, I noted that after the Dynamic Figure period there appears to be a rationalisation of headdress types, as artists depicted fewer types in later rock art styles (see also Chaloupka 1993a; Jones and May 2017). This rationalisation may reflect societal change and a waning preference to make and use headdresses for all ritual performance and practices.

Chaloupka (1993a:110) suggested that in '… complexity and variety these three items [headdresses, pubic aprons and pubic tassels] of apparently everyday forms of dress have no current Australian counterpart, although in some areas headdresses continue to be made for ritual occasion'. I have interpreted this statement to mean headdresses are prevalent in Dynamic Figure art, not that this art reflects the 'everyday' (Johnston 2017). However, Chaloupka's observation, that there are fewer headdresses used in contemporary Arnhem Land than in Dynamic Figure art, is supported by ethnographic evidence. For example, Berndt (1951a) describes six exchange ceremonies from west Arnhem Land where only one, Njalaidj, involved headdresses and these he also described were similar in form to headdresses used in another ritual, Kunapipi (Berndt 1951a:170; see also Berndt 1951b; Berndt and Berndt 1977). Similarly, Warner (1958:497-498) observed that headdresses were only made for specific rituals. In contemporary northern Australia body painting is more common within ritual (Figure 10.11; see also AIATSIS ALTMAN.J01.CS; ALTMAN.J01.BW; EDWARDS.R01.CS).


*Figure 10.11. Following Mountford (1949:772): men painted for a ceremony at Gunbalanaya (Oenpelli).*

In contrast, in Dynamic Figure art no other material culture type was more numerous or variable in form than headdresses (Section 7.6-7.8). Of the held weapons, two types of boomerangs were recorded and two, possibly three, types of spears were recorded, while other weapons were uniform in depiction. This is also contrary to ethnographic collections, where numerous types of spears and boomerangs are recorded, and different to subsequent rock art styles where numerous variations of weapons are depicted (see Allen 2011; Hayward 2016; Lewis 1988). This could reflect the lives of the people who produced Dynamic Figure art; perhaps fewer spear and boomerang types were depicted in rock art as in people's daily lives there were fewer types used. The movement of people into new areas as well as different richer environments and landscapes may have encouraged innovation and creativity of different material culture types (Section 10.3; see also Lewis 1988: Chapter 7). Like rock art styles that are no longer painted because the messages they hold and communicate become unnecessary or ineffective (Lewis 1988:94; Taçon 1994:124-125); similarly, rituals and the headdresses that are associated with them could also become ineffective or unnecessary, thus no longer performed. This could manifest as fewer headdresses being depicted in the art, i.e. the headdresses and ritual practice depicted in Dynamic Figure art became rationalised after this period as new rituals, with fewer headdresses, or fewer types of rituals were practiced by people. Ethnographically, this process has been recorded in west Arnhem Land as the Wubarr and Marain rituals were superseded by the Kunabibi and Yabbadurruwritual (Garde 2011:410,417)

A further functional consideration of variation in material culture is that boomerang and spear types may have also been limited by their technical requirement as functional hunting weapons; however, recent ethnographic records note that these objects have ceremonial and musical functions (Brandl 1988:173, also see Cundy 1980:147-148 for similar consideration regarding Central Australian spear throwers and functionality). Whereas headdresses, which have numerous types for different ceremonial occasions, have fewer technical limitations. While this could account for the variation of headdresses and lack of variation in weapons in Dynamic Figure art it does not explain the reverse in subsequent art styles. Also, the variation of spear types in contemporary Arnhem Land (e.g. Allen 2011). However, the technical requirements of material culture objects will have influenced their variation at times in the past to some an extent.

While Dynamic Figure art, or any rock art, cannot be employed to directly surmise information about the past from scenes depicted upon a wall, some insights can be examined. Comparing subsequent rock art styles, ethnographic accounts of headdress production and images of contemporary rituals, it appears that headdresses were more frequently employed and had more variations in ritual practice during the Dynamic Figure period than in the recent period.

### 10.5. Conclusion

Dynamic Figure art provides insights into ritual practice and society during the Dynamic Figure period. As I argued, Dynamic Figure art provides indications of how Dynamic Places could have been used to maintain the social dynamics of the people which created it and enforce the significance and the information these places contained. By exploring this process, I suggested that the existence of Dynamic Places suggests a closer association between Dynamic Figure art production and the subsequent rock art styles, showing that Dynamic Places and Dynamic Figure art established how and where rock art would be produced by future generations of artists.

Following this, I examined aspects of ritual practice and the iconographic art systems of contemporary northern Australia and Dynamic Figure art. Although not identical, mechanisms that artists employ today appear to be present in Dynamic Figure art; suggesting a continuity in elements of art production; however, not necessarily a continuity of meaning. Finally, I examined how Dynamic Figure motifs reveal information about actual ritual at this time, specifically the depiction and role of females in ritual practice and the waning of headdresses. The former likely an indication of continuity and the later discontinuity in ritual practice from the past to the present. This investigation has shown what insights Dynamic Figure art can provide into past ritual practice.

# Chapter 11: Conclusion

## 11.1. Overview

Human figures in rock art provide a unique perspective into the lifeways of people who lived in the past. Dynamic Figure art epitomises this phenomenon as it consists of human figures, depicted in exceptional detail, conducting specific and significant activities. These activities provide a context for understanding how people saw their world, their material culture and how they communicated and interacted with each other. From my analysis of the rock art of Jabiluka, I have concluded that Dynamic Figure art is intrinsically linked with ritual practice. Although researchers have previously discussed links between Dynamic Figure art, mythology and to a lesser extent ritual (e.g., Brandl 1988:172; Chaloupka 1993a:112,230; Chippindale et al. 2000; Taçon and Chippindale 2001a); this thesis has provided the most thorough investigation of Dynamic Figure art and evidence for its connection with ritual practice. Moreover, the ritual practice approach and systematic method employed in this research is one that can be re-examined and scrutinised by subsequent researchers (e.g., Bahn 2002).

Upon establishing this intrinsic connection, I investigated what insights Dynamic Figure art provides of the people and their lifeways who painted upon the rock shelters of western Arnhem Land. In the introductory chapter, I positioned this research as part of a transition in Arnhem Land rock art research (see Section 1.7); as it does not focus upon developing and scrutinising chronological sequences consisting of many styles of art from a wide area (e.g., Brandl 1988; Chaloupka 1993a; Chippindale and Taçon 1998; Lewis 1988; Taçon and Chippindale 1993), but instead investigate how one type of rock art from one area can inform us about the past. To this end, the key research question of this thesis was: does Dynamic Figure rock art provide insights into past ritual behaviours in western Arnhem Land? The subsidiary research questions built upon specific attributes of ritual practice observed of Dynamic Figure art. These questions concerned: where in the landscape was Dynamic Figure art recorded, how do individual motifs inform us about the past and do the narrative scenes depicted provide us with insights into people's actual ritual behaviour during the Dynamic Figure period.

## 11.2. Summary

In order to investigate a link between Dynamic Figure art and ritual, I defined and contextualised ritual as ritual practice. The ritual practice approach preferences identifying the specific attributes present in all forms of ritual, regardless of place or time, instead of attempting to understand the meaning of a specific ritual (see Verhoven 2011:112). This approach is well placed to consider if ritual is a valuable context through which to consider a material culture assemblage (see Section 4.4); however, it can be limiting in this regard as well (see Section 1.7). The attributes of ritual practice provided the themes through which Dynamic Figure art was discussed, these were formalism, traditionalism, invariance, communicating sacred or canonical messages, rule governance and performance (see Chapter 9). In Chapter 10 the most prominent of ritual attributes of Dynamic Figure art were discussed and investigated further as they provided the most insightful indications of people's lifeways during the Dynamic Figure period.

Dynamic Figure art exhibits prominent indications of ritual formalism and traditionalism which was observed by mapping where people painted in their landscape. Artists painted at specific places, Dynamic Places, which were typically high prominent rock formations, which contained large shelters but were also surrounded by small and medium sized sites (Section 10.2). These artists, as well as their decedents, would return to these places to paint upon multiple occasions, as many of the panels and sites had multiple instances of Dynamic Figure art production (Section 9.3). This process of repainting places was demonstrated from the analysis of Jabiluka Dynamic Figure art but was consistent across the greater western Arnhem Land Dynamic Figure art assemblage (Section 10.2). Moreover, the overpainting of stencils and prints and then production of new stencils at these places suggests that these artists were responding to older art practices and then adapting them to suit their own requirements for rock art production (Section 9.4). These attributes of Dynamic Figure art production, within the context of ritual practice, have possible implications for rock art creation in the past. For instance, large sites could have facilitated other people observing or being part of Dynamic Figure art production and potentially art production formed part of ritual performance. I argued in Chapter 10, that through the process of repeated ritual art production, Dynamic Places would have become associated with ritual information which passers-by could have received through visitation or avoided and not received if cultural protocols stipulated, but in doing so they would reinforce the notion that

important but restricted ritual information was contain at those places. These processes would have continued until the ritual messages contain at these Dynamic Places and in Dynamic Figure art was no longer conveying the information artists needed and it was either directly replaced by new forms of rock art or a period of drastically reduced art production precipitated (e.g., Lewis 1988:94; Taçon 1989a 358-359). Further research of this topic would be fruitful; for example, to what extent are the subsequent rock art styles painted at these Dynamic Places and do these other art styles exhibit similar localised production (e.g. Hammond 2017; Jones and May 2017).

My investigation and analysis of the human figures artists painted at these Dynamic Places revealed other aspects of ritual formalism, traditionalism as well as invariance and performance, which suggested further information about peoples past lifeways and the iconography of their art production. Dynamic Figure motifs typically wear a material culture assemblage that is associated with the formalism of ritual practice; this is supported by ethnographic analysis (Section 9.2 and Section 9.8). The most prominent ritual material cultural objects in Dynamic Figure art are headdresses, and to a lesser extent pubic skirts; headdresses were recorded to be the most depicted object and also exhibited the most variation (Chapter 7). The headdresses in Dynamic Figure art imply a specialised ritual time and their variation or invariance also indicated performative information about the roles of certain motifs within a scene. Moreover, the in-depth analysis of these human figures and the rarer therianthropes also revealed aspects of Dynamic Figure artist's iconographic system.

This iconographic system was highlighted through the presence of invariant motifs, most notably *the running female,* but also by the invariant Dynamic Figure scenes in Jabiluka; however, these scene and motifs were also observed in greater western Arnhem Land. In Chapter 10, I argued that this iconography has parallels with contemporary art practice and ethnographically recorded rock art production in northern Australia (Section 10.3). These parallels provided the context through which to consider how a Dynamic Figure iconographic art system may have imparted or not imparted information to observers at its time of production. For instance, people initiated into this iconographic system may have recognised these invariant motifs and associated with them specific information, e.g. the type 2 therianthrope (Section 9.7). When they or other artists painted these invariant motifs it would connected these scenes in the landscape and further bolster the connection between Dynamic Figure art, ritual practice and the larger associated mythology (e.g., Taçon and Chippindale 2001a). In this way,

Dynamic Figure artists could have demonstrated their knowledge of ritual practice by painting aspects of it and the motifs (mythological beings) connected to it; in turn this could have enhanced their own status, and potentially power, within their society. The control of information (e.g., rule governance) could have happened in tandem with physical access to Dynamic Places, as even once present in front of a panel a person's knowledge could depend upon their initiation into the ritual practice associated with Dynamic Figure art. Headdresses and hair adornments appear to have been a major component within this artistic system as they connect Dynamic Figure art with ritual practice but also were the mechanism through which artists associated information to specific motifs within scenes. I argued that associating information via headdresses is an efficient method of ritual communication and would have likely reflected actual ritual performance at this time; something still practiced in contemporary Arnhem Land (Section 9.8 and Section 10.4).

The parallels between this iconographic system and what is practice in present day Arnhem Land is an example of the cultural continuity of northern Australia; however, it doesn't necessarily suggests that an unchanging iconographic system operated from the Dynamic Figure art period to the present (Taçon et al. 1996; cf. Chaloupka 1993a). Following this line of inquiry would be immensely valuable to better understanding the mechanisms surrounding rock art production in northern Australia and elsewhere. This thesis has provided the starting point for this research and the immense body of rock art in western Arnhem Land provides a data set through which this sort of investigation would be possible.

While this study revealed certain continuities between past art production and present practices, it also provided some insights to actual ritual behaviour during the Dynamic Figure period. Two significant insights concern females in Dynamic Figure art and the prominence of headdresses in ritual behaviour. In Dynamic Figure art female figures, defined by sexual dimorphism, are in a minority, but when painted they have a specific range of material culture and are depicted undertaking activities by themselves, with females, with males and with therianthropes. These scenes depicted females engaged in complex ritual performances and possibly female only ritual activities, suggesting that women at this time, as in the present, had a significant role within ritual and at times their own separate ritual practice (see Section 10.4; Berndt and Berndt 1977:256,261). In contrast, the ubiquity and prominence of headdresses in Dynamic Figure art may highlight aspects of discontinuity between Arnhem Land's past and present as in

contemporary ritual practice people in Arnhem Land more often paint their bodies than make headdresses (Section 10.4). The accuracy of these conclusions, regarding continuity and discontinuity in Arnhem Land rock art production and ritual behaviour, should be further investigated through comparative analysis of regions beyond northern Australia, where ethnographic sources can complement investigations of figurative rock art produced in a ritual context.

### 11.3. Conclusion

Dynamic Figure art is the first definitive and archaeologically meaningful body of rock art in Arnhem Land and contains an unparalleled record of the people who lived in that landscape. It demonstrates the continuity and enduring significance that people and their ancestors have for this extraordinary painted landscape. This thesis concerned ritual practice and rock art, two phenomena that when considered together reveal more about how people understood their world and themselves, than their daily activities; although they are very much interlinked. I concluded that an intrinsic link exists between ritual practice and Dynamic Figure art, and my analysis revealed insights into aspects of people's lifeways at its time of production. The Dynamic Figure art of Jabiluka records the ritual activities and material culture of the people living in that landscape and what they thought was most significant to communicate to each other and their future generations.

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Judy Opitz Collection (Griffith University). Courtesy of Sally K. May

**Film material**

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Robert Tonkinson. Australian Institute of Aboriginal and Torres Strait Islander Studies. archive manuscript: PMS 2395

**Maps**

Where noted maps were produced with the permission of CartoGIS Services, College of Asia and the Pacific, The Australian National University.

# Appendix 1: Complete list of all Dynamic Figure data collected

**Complete list of data recorded from the Dynamic Figure motifs of Jabiluka**

| DF scene # | DF motif # | Activity | Infill | Arm poses | Head depicted | Sex | Therianthrope | Neck type | Arm bumps |
|---|---|---|---|---|---|---|---|---|---|
| 1 | I10019.1.1 | In motion (with weapons) | lines | Below legs weapons hold | 1 | 0 | 0 | Depicted through necklace | 0 |
| 2 | I10019.2.1 | In motion (without weapons) | dashes | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 3 | I10019.3.1 | complex activity | no infill | 0 | 1 | Female | 0 | Depicted through necklace | 0 |
| 3 | I10019.3.2 | complex activity | NP | 0 | NP | Female | 0 | Defined neck | 0 |
| 3 | I10019.3.3 | complex activity | lines | Crooked elbow | 1 | Female | 0 | Depicted through necklace | 0 |
| 3 | I10019.3.4 | complex activity | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 4 | I10019.4.1 | NP | NP | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 5 | I10007.5.1 | In motion (without weapons) | no infill | Curved elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 5 | I10007.5.2 | In motion (without weapons) | lines | 0 | 1 | 0 | 0 | NP | 0 |
| 5 | I10007.5.3 | In motion (without weapons) | NP | 0 | 1 | NP | 0 | Depicted from necklace | NP |
| 6 | I10007.6.1 | Hunting | shaded | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 7 | I10028.7.1 | In motion (without weapons) | lines | 0 | NP | 0 | 0 | No defined neck | 0 |
| 8 | I10012.8.1 | Sexual intercourse | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 8 | I10012.8.2 | Sexual intercourse | lines | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 9 | I10034.9.1 | In motion (without weapons) | lines | Crooked elbow | 1 | Female | 0 | No defined neck | 0 |
| 9 | I10034.9.2 | In motion (without | NP | 0 | NP | NP | 0 | NP | NP |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | weapons) | | | | | | | |
| 10 | I10034.10.1 | Sexual intercourse | no infill | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 10 | I10034.10.2 | Sexual intercourse | shaded | 0 | 1 | Female | 0 | Defined neck | 0 |
| 11 | I10034.11.1 | Sexual intercourse | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 11 | I10034.11.2 | Sexual intercourse | lines | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 12 | R10037.12.1 | In motion (without weapons) | no infill | Crooked elbow | 1 | Female | 0 | Single line neck | 0 |
| 12 | R10037.12.2 | In motion (without weapons) | no infill | Curved elbow | 1 | Female | 0 | Single line neck | 0 |
| 13 | I10046.13.1 | In motion (with weapons) | lines | Full power swing | 1 | Female | 0 | Defined neck | 0 |
| 14 | I10063.14.1 | In motion (with weapons) | dashes | 0 | 1 | Female | 0 | Defined neck | 0 |
| 14 | I10063.14.2 | In motion (with weapons) | no infill | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 15 | I30173.15.1 | Sexual intercourse | lines | 0 | 0 | 0 | 0 | Defined neck | 0 |
| 15 | I30173.15.2 | Sexual intercourse | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 16 | I30173.16.1 | In motion (with weapons) | lines | Curved elbow | 1 | 0 | 0 | No defined neck | 0 |
| 17 | I30067.17.1 | complex activity | shaded | 0 | 1 | Female | 0 | No defined neck | 0 |
| 17 | I30067.17.2 | complex activity | shaded | 0 | 1 | Female | 0 | No defined neck | 0 |
| 18 | I30030.18.1 | complex activity | shaded | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 18 | I30030.18.2 | complex activity | no infill | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 18 | I30030.18.3 | complex activity | no infill | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 18 | I30030.18.4 | complex activity | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 18 | I30030.18.5 | complex activity | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 18 | I30030.18.6 | complex activity | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 18 | I30030.18.7 | complex activity | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 18 | I30030.18.8 | complex activity | lines | 0 | 1 | Female | 0 | No defined neck | 0 |
| 19 | I30030.19.1 | complex activity | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 19 | I30030.19.2 | complex activity | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 20 | I30061.20.1 | Stationary | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 21 | I20080.21.1 | In motion (with weapons) | no infill | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 22 | I20113.22.1 | complex activity | shaded | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 22 | I20113.22.2 | complex activity | shaded | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 22 | I20113.22.3 | complex activity | shaded | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 22 | I20113.22.4 | complex activity | shaded | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 23 | I30091.23.1 | Tracking | lines | Full power swing | 1 | 0 | 0 | Depicted from necklace | 0 |
| 24 | I30091.24.1 | In motion (with weapons) | shaded | Full power swing | 1 | 0 | 0 | No defined neck | 0 |
| 24 | I30091.24.2 | In motion (with weapons) | shaded | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 24 | I30091.24.3 | In motion (with weapons) | lines | Full power swing | 1 | 0 | 1 | Defined neck | 0 |
| 25 | I30091.25.1 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 25 | I30091.25.2 | In motion (with weapons) | lines | Full power swing | NP | 0 | 0 | NP | 0 |
| 26 | I20174.26.1 | In motion (with weapons) | shaded | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 27 | I10024.27.1 | complex activity | no infill | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 27 | I10024.27.2 | complex activity | no infill | 0 | 1 | 0 | 1 | Defined neck | 0 |
| 27 | I10024.27.3 | complex activity | shaded | 0 | NP | 0 | 0 | No defined neck | 0 |
| 27 | I10024.27.4 | complex activity | lines | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 27 | I10024.27.5 | complex activity | lines | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 27 | I10024.27.6 | complex activity | shaded | 0 | 1 | 0 | 0 | Depicted from | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | necklace | |
| 28 | R10021.28.1 | In motion (without weapons) | no infill | 0 | 0 | 0 | 0 | Depicted from necklace | 0 |
| 29 | R10021.29.1 | In motion (with weapons) | shaded | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 30 | I10039.30.1 | In motion (with weapons) | lines | Crooked elbow | 1 | 0 | 0 | Defined neck | 0 |
| 30 | I10039.30.2 | In motion (with weapons) | lines | Crooked elbow | 1 | 0 | 0 | Defined neck | 0 |
| 30 | I10039.30.3 | In motion (with weapons) | lines | Crooked elbow | 1 | 0 | 0 | Depicted through necklace | 0 |
| 30 | I10039.30.4 | In motion (with weapons) | lines | Crooked elbow | 1 | 0 | 0 | Depicted through necklace | 0 |
| 31 | I10039.31.1 | Hunting | lines | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 31 | I10039.31.2 | Hunting | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 31 | I10039.31.3 | Hunting | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 32 | I10039.32.1 | Campfire | shaded | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 32 | I10039.32.2 | Campfire | lines and shaded | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 32 | I10039.32.3 | Campfire | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 32 | I10039.32.4 | Campfire | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 33 | I20189.33.1 | Tracking | dashes | 0 | 1 | 0 | 0 | NP | 0 |
| 33 | I20189.33.2 | Tracking | lines | 0 | NP | 0 | 0 | NP | 0 |
| 33 | I20189.33.3 | Tracking | dashes | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 33 | I20189.33.4 | Tracking | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 34 | I10049.34.1 | In motion (without weapons) | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 35 | I10049.35.1 | punishment scene | no infill | 0 | 1 | 0 | 0 | Depicted through necklace | 1 |

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|---|---|---|---|---|---|---|---|---|---|
| 35 | I10049.35.2 | punishment scene | lines | 0 | 1 | 0 | 0 | No defined neck | 1 |
| 35 | I10049.35.3 | punishment scene | no infill | 0 | 1 | 0 | 1 | No defined neck | 0 |
| 35 | I10049.35.4 | punishment scene | no infill | 0 | 0 | 0 | 0 | Depicted from necklace | 0 |
| 36 | I30143.36.1 | Hunting | lines | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 37 | I30143.37.1 | In motion (with weapons) | shaded | long arm figure | 1 | 0 | 0 | Depicted from necklace | 0 |
| 37 | I30143.37.2 | In motion (with weapons) | lines | long arm figure | 1 | 0 | 0 | Depicted from necklace | 0 |
| 38 | I10053.38.1 | In motion (with weapons) | shaded | long arm figure | 1 | 0 | 0 | No defined neck | 0 |
| 39 | I30145.39.1 | In motion (with weapons) | lines | long arm figure | 1 | 0 | 0 | Depicted from necklace | 0 |
| 40 | I30145.40.1 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 40 | I30145.40.2 | In motion (with weapons) | no infill | 0 | 0 | 0 | 0 | Depicted from necklace | 0 |
| 40 | I30145.40.3 | In motion (with weapons) | no infill | long arm figure | 0 | 0 | 0 | No defined neck | 0 |
| 40 | I30145.40.4 | In motion (with weapons) | lines | long arm figure | 1 | 0 | 0 | Depicted from necklace | 0 |
| 41 | I10063.41.1 | In motion (with weapons) | lines | 0 | NP | NP | 0 | NP | NP |
| 42 | I10072.42.1 | Stationary | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 43 | I30150.43.1 | Stationary | lines and shaded | long arm figure | 1 | 0 | 0 | No defined neck | 0 |
| 44 | R10037.44.1 | Stationary | lines | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 45 | R10037.45.1 | Stationary | lines | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 46 | I30183.46.1 | In motion (with weapons) | lines | long arm figure | 1 | 0 | 0 | No defined neck | 0 |

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|---|---|---|---|---|---|---|---|---|---|
| 46 | I30183.46.2 | In motion (with weapons) | dashes | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 46 | I30183.46.3 | In motion (with weapons) | dashes | Crooked elbow | 1 | 0 | 0 | No defined neck | 0 |
| 46 | I30183.46.4 | In motion (with weapons) | lines | Crooked elbow | 1 | 0 | 0 | No defined neck | 0 |
| 47 | I30183.47.1 | Stationary | no infill | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 48 | I20125.48.1 | In motion (without weapons) | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 48 | I20125.48.2 | In motion (without weapons) | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 48 | I20125.48.3 | In motion (without weapons) | lines | 0 | NP | 0 | 0 | No defined neck | 0 |
| 49 | R10015.49.1 | complex activity | lines and shaded | 0 | 1 | 0 | 0 | Defined neck | NP |
| 50 | I30030.50.1 | In motion (with weapons) | lines | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 50 | I30030.50.2 | In motion (with weapons) | lines | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 51 | I30030.51.1 | In motion (with weapons) | no infill | 0 | NP | 0 | 0 | Depicted from necklace | NP |
| 52 | I30030.52.1 | complex activity | shaded | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 52 | I30030.52.2 | complex activity | shaded | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 52 | I30030.52.3 | complex activity | shaded | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 53 | I30030.53.1 | NP | lines | 0 | NP | NP | 0 | NP | NP |
| 53 | I30030.53.2 | NP | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 53 | I30030.53.3 | NP | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 54 | I30030.54.1 | In motion (with weapons) | lines | 0 | NP | 0 | 0 | NP | NP |
| 54 | I30030.54.2 | In motion (with | lines | 0 | 1 | 0 | 0 | Depicted from | 0 |

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|---|---|---|---|---|---|---|---|---|---|
| | | weapons) | | | | | | necklace | |
| 54 | I30030.54.3 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 54 | I30030.54.4 | In motion (with weapons) | lines | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 54 | I30030.54.5 | In motion (with weapons) | NP | 0 | NP | NP | NP | NP | NP |
| 55 | I30030.55.1 | In motion (with weapons) | lines | Full power swing | 1 | 0 | 0 | Depicted from necklace | 0 |
| 56 | I30030.56.1 | complex activity | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 56 | I30030.56.2 | complex activity | no infill | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 57 | I30030.57.1 | sitting | no infill | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 58 | I30030.58.1 | In motion (with weapons) | no infill | long arm figure | NP | 0 | 0 | Depicted from necklace | 0 |
| 59 | I30030.59.1 | In motion (with weapons) | no infill | long arm figure | 0 | 0 | 0 | Depicted from necklace | 0 |
| 59 | I30030.59.2 | In motion (with weapons) | no infill | Crooked elbow | NP | 0 | 0 | Depicted from necklace | 0 |
| 59 | I30030.59.3 | In motion (with weapons) | no infill | 0 | NP | 0 | 0 | NP | 0 |
| 60 | I30030.60.1 | complex activity | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 60 | I30030.60.2 | complex activity | lines | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 61 | I20183.61.1 | In motion (with weapons) | no infill | Crooked elbow | 1 | Female | 0 | Defined neck | 0 |
| 61 | I20183.61.2 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 62 | I20183.62.1 | In motion (with | lines and | 0 | 1 | 0 | 0 | No defined neck | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | weapons) | shaded | | | | | | |
| 62 | I20183.62.2 | In motion (with weapons) | dashes | 0 | NP | 0 | 0 | NP | 0 |
| 62 | I20183.62.3 | In motion (with weapons) | lines | Crooked elbow | 1 | 0 | 0 | Defined neck | 0 |
| 63 | I20183.63.1 | Hunting | NP | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 64 | I20183.64.1 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 65 | I20183.65.1 | In motion (with weapons) | shaded | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 65 | I20183.65.2 | In motion (with weapons) | shaded | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 66 | I20183.66.1 | Hunting | lines | Crooked elbow | 1 | 0 | 0 | No defined neck | 0 |
| 67 | I20183.67.1 | Stationary | shaded | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 67 | I20183.67.2 | Stationary | shaded | 0 | 0 | 0 | 0 | No defined neck | 0 |
| 68 | I20183.68.1 | In motion (with weapons) | lines and shaded | Below legs weapons hold | 1 | 0 | 0 | Defined neck | 0 |
| 69 | R10009.69.1 | In motion (with weapons) | shaded | 0 | 0 | 0 | 0 | Depicted from necklace | 0 |
| 69 | R10009.69.2 | In motion (with weapons) | shaded | Below legs weapons hold | 1 | 0 | 0 | Depicted from necklace | 0 |
| 69 | R10009.69.3 | In motion (with weapons) | shaded | Below legs weapons hold | 0 | 0 | 0 | Depicted from necklace | 0 |
| 70 | I10034.70.1 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 70 | I10034.70.2 | In motion (with weapons) | NP | 0 | 1 | 0 | 1 | NP | NP |
| 70 | I10034.70.3 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 70 | I10034.70.4 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 70 | I10034.70.5 | In motion (with | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | weapons) | | | | | | | |
| 70 | I10034.70.6 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 70 | I10034.70.7 | In motion (with weapons) | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 71 | I10034.71.1 | Stationary | lines | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 72 | I10034.72.1 | In motion (without weapons) | no infill | 0 | 1 | 0 | 0 | No defined neck | 0 |
| 73 | I10046.73.1 | complex activity | lines | Curved elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 73 | I10046.73.2 | complex activity | lines | Curved elbow | 1 | 0 | 0 | Depicted through necklace | 0 |
| 73 | I10046.73.3 | complex activity | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 74 | I10046.74.1 | In motion (without weapons) | lines and shaded | 0 | 1 | 0 | 0 | NP | 0 |
| 75 | I10046.75.1 | Tracking | lines | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 75 | I10046.75.2 | Tracking | shaded | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 75 | I10046.75.3 | Tracking | no infill | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 75 | I10046.75.4 | Tracking | shaded | Crooked elbow | NP | 0 | 0 | NP | 0 |
| 75 | I10046.75.5 | Tracking | lines | Crooked elbow | 1 | 0 | 0 | NP | 0 |
| 75 | I10046.75.6 | Tracking | shaded | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 75 | I10046.75.7 | Tracking | shaded | Curved elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 75 | I10046.75.8 | Tracking | shaded | Crooked elbow | 1 | 0 | 0 | Depicted from necklace | 0 |
| 76 | I10046.76.1 | Stationary | lines | 0 | 1 | 0 | 1 | Defined neck | 0 |
| 76 | I10046.76.2 | Stationary | lines | 0 | 1 | 0 | 1 | Defined neck | 1 |

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|---|---|---|---|---|---|---|---|---|---|
| 77 | I10046.77.1 | sitting | no infill | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 77 | I10046.77.2 | sitting | no infill | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 78 | I10067.78.1 | In motion (with weapons) | lines | 0 | 1 | 0 | 1 | No defined neck | 0 |
| 79 | I30172.79.1 | complex activity | lines | 0 | NP | 0 | 0 | Defined neck | 0 |
| 79 | I30172.79.2 | complex activity | lines | 0 | NP | 0 | 0 | Defined neck | 0 |
| 80 | I30172.79.3 | Tracking | shaded | Below legs weapons hold | 1 | 0 | 0 | Depicted from necklace | 0 |
| 81 | I30175.81.1 | In motion (without weapons) | lines | Crooked elbow | 1 | 0 | 0 | Defined neck | 0 |
| 82 | I30175.82.1 | complex activity | lines | Crooked elbow | 1 | 0 | 0 | Defined neck | 0 |
| 82 | I30175.82.2 | complex activity | dashes | Crooked elbow | NP | 0 | 0 | NP | 0 |
| 82 | I30175.82.3 | complex activity | no infill | 0 | 1 | NP | 1 | Defined neck | 0 |
| 82 | I30175.82.4 | complex activity | no infill | 0 | 1 | 0 | 1 | Defined neck | 0 |
| 82 | I30175.82.5 | complex activity | lines | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 82 | I30175.82.6 | complex activity | no infill | 0 | 1 | 0 | 1 | Defined neck | 0 |
| 83 | I30175.83.1 | complex activity | no infill | 0 | 0 | 0 | 0 | Defined neck | 0 |
| 83 | I30175.83.2 | complex activity | no infill | 0 | 1 | 0 | 1 | Defined neck | 0 |
| 84 | I30175.84.1 | In motion (without weapons) | shaded | 0 | 0 | 0 | 0 | Defined neck | 0 |
| 85 | I10113.85.1 | In motion (without weapons) | lines | 0 | 1 | 0 | 0 | NP | NP |
| 86 | I10113.86.1 | In motion (without weapons) | lines | long arm figure | 1 | 0 | 0 | Defined neck | 0 |
| 87 | I10113.87.1 | Stationary | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 87 | I10113.87.2 | Stationary | dashes | 0 | 1 | 0 | 0 | NP | 0 |
| 87 | I10113.87.3 | Stationary | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 88 | I10113.88.1 | In motion (with | lines | Below legs | 1 | 0 | 0 | Depicted from | 0 |

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|---|---|---|---|---|---|---|---|---|---|
| | | weapons) | | weapons hold | | | | necklace | |
| 89 | I10113.89.1 | complex activity | no infill | 0 | 1 | 0 | 1 | No defined neck | 0 |
| 89 | I10113.89.2 | complex activity | lines and shaded | Full power swing | 1 | 0 | 0 | Depicted from necklace | 0 |
| 89 | I10113.89.3 | complex activity | no infill | 0 | 1 | 0 | 1 | Defined neck | 0 |
| 89 | I10113.89.4 | complex activity | lines | 0 | 1 | 0 | 0 | NP | 0 |
| 89 | I10113.89.5 | complex activity | lines | Below legs weapons hold | NP | 0 | 0 | NP | 0 |
| 89 | I10113.89.6 | complex activity | lines and shaded | Full power swing | 1 | 0 | 0 | Depicted from necklace | 0 |
| 89 | I10113.89.7 | complex activity | lines | Below legs weapons hold | 1 | 0 | 0 | Depicted from necklace | 0 |
| 89 | I10113.89.8 | complex activity | lines | Below legs weapons hold | 1 | 0 | 0 | Depicted from necklace | 0 |
| 89 | I10113.89.9 | complex activity | no infill | 0 | 1 | 0 | 1 | Defined neck | 0 |
| 90 | I10113.90.1 | In motion (with weapons) | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 90 | I10113.90.2 | In motion (with weapons) | lines | 0 | 1 | Female | 0 | Depicted from necklace | 0 |
| 91 | I10113.91.1 | Stationary | lines | 0 | 1 | Female | 0 | Defined neck | 0 |
| 92 | I10113.92.1 | Stationary | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 93 | I10113.93.1 | Stationary | lines | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 94 | I30181.94.1 | In motion (with weapons) | shaded | Below legs weapons hold | 1 | 0 | 0 | Depicted from necklace | 0 |
| 95 | I30181.95.1 | Stationary | lines | 0 | 1 | 0 | 0 | Defined neck | 0 |
| 95 | I30181.95.2 | Stationary | shaded | 0 | 1 | 0 | 0 | Depicted from necklace | 0 |
| 96 | M080P.96.1 | In motion (with weapons) | shaded | Below legs weapons hold | 1 | 0 | 0 | NP | 0 |
| 97 | M080P.96.2 | In motion (with | shaded | 0 | NP | NP | 0 | NP | NP |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | weapons) | | | | | | | |
| 97 | M080P.97.1 | In motion (with weapons) | shaded | 0 | NP | NP | 0 | NP | NP |

| DF motif # | Arm muscles | Hand types | Feet types | Splits | Leg muscles | Leg forms | Head types | Headdress infill | Necklet | Dilly bag |
|---|---|---|---|---|---|---|---|---|---|---|
| I10019.1.1 | UU ML LW | circle | hook | 1 | MU ML SL | 0 | oval | line | 1 | 0 |
| I10019.2.1 | MU ML LW | point | hook | 1 | NP | 0 | oval | dot | 0 | 0 |
| I10019.3.1 | parallel line arms | point | NP | NP | NP | NP | Dreads | NP | 1 | 0 |
| I10019.3.2 | NP | NP | NP | NP | NP | NP | NP | NP | NP | NP |
| I10019.3.3 | parallel line arms | point | point | 0 | MU ML SL | combined leg form | bald | no infill | 1 | 0 |
| I10019.3.4 | parallel line arms | point | point | 0 | MU ML SL | combined leg form | no headdress | NP | 0 | 0 |
| I10019.4.1 | parallel line arms | NP | NP | NP | NP | NP | NP | dot | 1 | NP |
| I10007.5.1 | single line arms | point | NP | 0 | MU ML SL | 0 | rectangle | shaded | 1 | 0 |
| I10007.5.2 | single line arms | NP | hook | 0 | MU ML SL | 0 | oval | shaded | 0 | 0 |
| I10007.5.3 | single line arms | NP | NP | NP | NP | NP | leaf | shaded | NP | NP |
| I10007.6.1 | single line arms | point | hook | 1 | MU ML SL | | leaf | shaded | 0 | 0 |
| I10028.7.1 | MU UL LW | triangle | hook | 1 | MU ML SL | 0 | oval | line | 0 | 0 |
| I10012.8.1 | parallel line arms | defined hand | hook | 0 | MU SL | Bent boomerang form | lines | no infill | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I10012.8.2 | parallel line arms | defined hand | defined foot | 0 | MU SL | Bent boomerang form | oval | line | 0 | 0 |
| I10034.9.1 | parallel line arms | circle | point | 0 | MU SL | 0 | long hair | no infill | 0 | 0 |
| I10034.9.2 | NP | NP | NP | 0 | MU SL | 0 | long hair | no infill | NP | NP |
| I10034.10.1 | UU ML LW | point | hook | 0 | MU ML SL | 0 | fan | line | 0 | 0 |
| I10034.10.2 | single line arms | point | hook | 0 | MU ML SL | 0 | quiff | no infill | 0 | 0 |
| I10034.11.1 | UU ML LW | NP | hook | 0 | MU ML SL | combined leg form | NP | NP | 0 | 0 |
| I10034.11.2 | UU ML LW | triangle | hook | 0 | MU ML SL | 0 | oval | line | 0 | 0 |
| R10037.12.1 | single line arms | point | point | 0 | MU SL | 0 | plat | line | 0 | 0 |
| R10037.12.2 | single line arms | point | point | 0 | MU SL | 0 | plat | line | 0 | 0 |
| I10046.13.1 | parallel line arms | point | fully defined foot | 1 | fully defined legs | 0 | bun | no infill | 0 | 1 |
| I10063.14.1 | UU ML LW | point | point | 0 | MU ML SL | 0 | tall bun | shaded | 0 | 0 |
| I10063.14.2 | parallel line arms | NP | point | 0 | MU ML SL | 0 | no headdress | NA | 0 | 0 |
| I30173.15.1 | MU ML LW | circle | point | 0 | MU ML SL | 0 | oval | line | 1 | 1 |
| I30173.15.2 | MU ML LW | circle | hook | 0 | MU ML SL | 0 | fuzzy short | shaded | 0 | 1 |
| I30173.16.1 | UU ML LW | point | point | 1 | MU ML SL | 0 | hooked | shaded | 1 | 0 |
| I30067.17.1 | fully defined arms | defined hand | fully defined foot | 0 | fully defined legs | combined leg form | bald | NA | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I30067.17.2 | NP | NP | fully defined foot | 0 | fully defined legs | combined leg form | no headdress | NA | 0 | 0 |
| I30030.18.1 | single line arms | point | point | 0 | MU ML SL | 0 | unique | shaded | 0 | 0 |
| I30030.18.2 | single line arms | point | point | 0 | MU ML SL | 0 | hooked | shaded | 0 | 0 |
| I30030.18.3 | single line arms | NP | point | 0 | MU SL | 0 | oval | no infill | 0 | 0 |
| I30030.18.4 | single line arms | point | point | 0 | parallel line legs | Bent boomerang form | unique | shaded | 0 | 0 |
| I30030.18.5 | single line arms | point | point | 0 | parallel line legs | 0 | long hair | no infill | 0 | 0 |
| I30030.18.6 | single line arms | point | point | 0 | parallel line legs | 0 | plat | no infill | 0 | 0 |
| I30030.18.7 | single line arms | point | point | 0 | parallel line legs | 0 | plat | no infill | 0 | 0 |
| I30030.18.8 | single line arms | NP | NP | 0 | parallel line legs | 0 | plat | no infill | 0 | 0 |
| I30030.19.1 | MU UL LW | circle | circle | 0 | MU ML SL | 0 | oval | line | 0 | 0 |
| I30030.19.2 | MU UL LW | circle | circle | 0 | MU ML SL | combined leg form | no headdress | NA | 0 | 1 |
| I30061.20.1 | MU UL LW | point | point | 0 | MU ML SL | 0 | unique | line | 0 | 0 |
| I20080.21.1 | single line arms | point | point | 0 | parallel line legs | 0 | leaf | dot | 1 | 0 |
| I20113.22.1 | UU ML LW | circle | circle | 0 | MU ML SL | 0 | circle | shaded | 1 | 0 |
| I20113.22.2 | UU ML LW | circle | circle | 0 | MU ML SL | 0 | circle | shaded | 1 | 0 |
| I20113.22.3 | UU ML LW | circle | NP | 0 | MU ML SL | 0 | tassel | shaded | 1 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I20113.22.4 | UU ML LW | circle | NP | 0 | MU ML SL | 0 | oval | shaded | 1 | 0 |
| I30091.23.1 | parallel line arms | circle | point | 1 | parallel line legs | 0 | oval | line | 1 | 0 |
| I30091.24.1 | UU ML LW | defined hand | defined foot | 0 | MU ML SL | 0 | oval | shaded | 0 | 0 |
| I30091.24.2 | UU ML LW | defined hand | hook | 0 | MU ML SL | 0 | oval | shaded | 0 | 0 |
| I30091.24.3 | single line arms | point | NP | NP | single line legs | 0 | NP | NA | 0 | 0 |
| I30091.25.1 | UU ML LW | triangle | hook | 0 | MU ML SL | 0 | oval | dot | 1 | 1 |
| I30091.25.2 | UU ML LW | triangle | point | 0 | MU ML SL | 0 | oval | dot | NP | 0 |
| I20174.26.1 | UU ML LW | NP | NP | 0 | parallel line legs | 0 | tube with tassel | shaded | 0 | 1 |
| I10024.27.1 | UU ML LW | circle | NP | 1 | NP | 0 | oval | line | 1 | 0 |
| I10024.27.2 | single line arms | point | point | 0 | single line legs | 0 | macropod | no infill | 0 | 0 |
| I10024.27.3 | UU ML LW | NP | NP | 1 | NP | 0 | oval | shaded | 1 | 0 |
| I10024.27.4 | UU ML LW | triangle | hook | 0 | MU ML SL | 0 | NP | NP | 1 | 0 |
| I10024.27.5 | UU ML LW | defined hand | NP | 1 | NP | NP | oval | no infill | 1 | 0 |
| I10024.27.6 | UU ML LW | triangle | NP | 1 | NP | 0 | oval | dot | 1 | 0 |
| R10021.28.1 | MU ML LW | circle | hook | 0 | MU ML SL | 0 | tassel | no infill | 1 | 0 |
| R10021.29.1 | MU ML LW | NP | NP | 1 | NP | 0 | oval | line | 0 | 1 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I10039.30.1 | MU ML LW | point | hook | 1 | MU ML SL | | tassel | line | 1 | 1 |
| I10039.30.2 | MU ML LW | point | hook | 1 | MU ML SL | | tassel | line | 1 | 0 |
| I10039.30.3 | MU ML LW | point | hook | 1 | MU ML SL | | tassel | line | 1 | 0 |
| I10039.30.4 | MU ML LW | point | hook | 1 | MU ML SL | | tassel | line | 1 | 0 |
| I10039.31.1 | UU ML LW | circle | hook | 1 | MU ML SL | | NP | NP | 0 | 0 |
| I10039.31.2 | UU ML LW | circle | hook | 1 | MU ML SL | | tassel | line | 0 | 0 |
| I10039.31.3 | UU ML LW | point | NP | 1 | MU ML SL | | NP | NP | 0 | 0 |
| I10039.32.1 | UU ML LW | point | hook | 0 | MU ML SL | combined leg form | oval | shaded | 0 | 0 |
| I10039.32.2 | UU ML LW | circle | hook | 0 | MU ML SL | combined leg form | Tube with lines emanating from the end | shaded | 1 | 0 |
| I10039.32.3 | UU ML LW | triangle | hook | 0 | MU ML SL | 0 | oval | dot | 0 | 0 |
| I10039.32.4 | UU ML LW | triangle | hook | 0 | MU ML SL | 0 | oval | dot | 1 | 0 |
| I20189.33.1 | MU UL LW | point | point | 0 | MU ML SL | 0 | oval | no infill | 0 | NP |
| I20189.33.2 | UU ML LW | NP | hook | 0 | MU ML SL | 0 | oval | line | 0 | 0 |
| I20189.33.3 | UU ML LW | point | point | 0 | MU ML SL | 0 | oval | no infill | 1 | 1 |
| I20189.33.4 | UU ML LW | triangle | hook | 0 | MU ML SL | 0 | oval | line | 1 | 1 |
| I10049.34.1 | NP | NP | NP | 0 | MU ML SL | 0 | oval | no infill | 1 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I10049.35.1 | UU ML LW | point | hook | 0 | MU ML SL | 0 | rectangle | no infill | 1 | 0 |
| I10049.35.2 | fully defined arms | triangle | hook | 1 | MU ML SL | 0 | circle with tassel | no infill | 0 | 0 |
| I10049.35.3 | single line arms | point | hook | 0 | single line legs | 0 | bird | no infill | 0 | 0 |
| I10049.35.4 | single line arms | point | hook | 0 | MU ML SL | 0 | rectangle | no infill | 1 | 0 |
| I30143.36.1 | UU ML LW | triangle | hook | 1 | MU ML SL | 0 | oval | no infill | 1 | 0 |
| I30143.37.1 | UU ML LW | triangle | hook | 1 | MU ML SL | 0 | oval | dot | 1 | 0 |
| I30143.37.2 | UU ML LW | NP | hook | 0 | MU ML SL | 0 | oval | line | 1 | 0 |
| I10053.38.1 | MU ML LW | point | NP | 1 | MU ML SL | 0 | tube with tassel | shaded | 0 | 0 |
| I30145.39.1 | UU ML LW | point | point | 1 | MU ML SL | 0 | oval | no infill | 1 | 1 |
| I30145.40.1 | NP | point | point | 1 | MU SL | | oval | line | 1 | 1 |
| I30145.40.2 | UU ML LW | point | hook | 1 | MU SL | 0 | oval | no infill | 1 | 1 |
| I30145.40.3 | UU ML LW | defined hand | point | 1 | MU SL | 0 | oval | no infill | 1 | NP |
| I30145.40.4 | UU ML LW | point | hook | 1 | MU SL | 0 | oval | shaded | 1 | 1 |
| I10063.41.1 | NP | NP | point | 1 | MU ML SL | 0 | NP | NP | NP | NP |
| I10072.42.1 | parallel line arms | point | point | 0 | MU ML SL | 0 | oval | line | NP | NP |
| I30150.43.1 | UU ML LW | triangle | NP | NP | NP | NP | oval | line | 0 | 1 |

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|---|---|---|---|---|---|---|---|---|---|---|
| R10037.44.1 | parallel line arms | defined hand | NP | 0 | NP | combined leg form, bent boomerang | oval | line | 0 | 0 |
| R10037.45.1 | NP | NP | NP | 0 | parallel line legs | 0 | oval | line | 0 | 0 |
| I30183.46.1 | UU ML LW | point | hook | 1 | MU ML SL | | circle with tassel | shaded | 0 | 0 |
| I30183.46.2 | UU ML LW | circle | hook | 1 | MU ML SL | 0 | rectangle | no infill | 0 | 0 |
| I30183.46.3 | UU ML LW | point | point | 0 | MU ML SL | 0 | tassel | line | 0 | 0 |
| I30183.46.4 | UU ML LW | point | hook | 1 | MU ML SL | 0 | rectangle | dot | 0 | 0 |
| I30183.47.1 | MU UL LW | defined hand | NP | NP | NP | NP | tassel | dot | 0 | 0 |
| I20125.48.1 | single line arms | point | point | 0 | MU ML SL | 0 | tassel | line | 0 | 0 |
| I20125.48.2 | single line arms | point | point | 0 | MU ML SL | 0 | Tube with lines emanating from the end | line | 0 | 0 |
| I20125.48.3 | NP | NP | point | 0 | MU ML SL | 0 | NP | NP | 0 | 0 |
| R10015.49.1 | NP | NP | hook | 0 | MU ML SL | 0 | oval | line | 0 | 0 |
| I30030.50.1 | single line arms | point | hook | 1 | parallel line legs | 0 | oval | no infill | 0 | 0 |
| I30030.50.2 | single line arms | point | point | 1 | MU ML SL | | rectangle | no infill | 0 | 0 |
| I30030.51.1 | NP | NP | NP | 1 | MU ML SL | 0 | oval | no infill | 1 | 0 |
| I30030.52.1 | single line arms | point | defined foot | 0 | parallel line legs | 0 | oval | shaded | 0 | 0 |
| I30030.52.2 | single line arms | point | NP | 0 | single line legs | 0 | no headdress | shaded | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I30030.52.3 | single line arms | point | defined foot | 0 | parallel line legs | 0 | oval | shaded | 0 | 0 |
| I30030.53.1 | NP | NP | hook | 0 | MU ML SL | 0 | NP | NP | NP | NP |
| I30030.53.2 | NP | NP | hook | 0 | MU ML SL | 0 | NP | NP | 1 | 0 |
| I30030.53.3 | NP | NP | hook | 0 | MU ML SL | 0 | NP | NP | 1 | 0 |
| I30030.54.1 | MU UL LW | NP | hook | 1 | MU ML SL | | NP | NP | NP | NP |
| I30030.54.2 | MU ML LW | triangle | hook | 1 | MU ML SL | | fuzzy short | no infill | 1 | 0 |
| I30030.54.3 | MU ML LW | point | point | 1 | MU ML SL | | fuzzy short | no infill | 1 | 0 |
| I30030.54.4 | UU ML LW | point | circle | 1 | MU ML SL | | fuzzy short | no infill | 1 | 0 |
| I30030.54.5 | NP | NP | NP | NP | NP | NP | fuzzy short | no infill | NP | NP |
| I30030.55.1 | parallel line arms | point | point | 1 | MU ML SL | | rectangle | no infill | 1 | 0 |
| I30030.56.1 | UU ML LW | circle | hook | 0 | MU ML SL | 0 | fan | no infill | 1 | 0 |
| I30030.56.2 | UU ML LW | circle | hook | 0 | MU ML SL | 0 | no headdress | no infill | 0 | 0 |
| I30030.57.1 | UU ML LW | circle | hook | 0 | MU ML SL | 0 | circle | line | 1 | 0 |
| I30030.58.1 | UU ML LW | point | NP | 1 | MU SL | | NP | NP | 1 | 0 |
| I30030.59.1 | UU ML LW | point | hook | 1 | MU ML SL | | oval | shaded | 1 | 0 |
| I30030.59.2 | UU ML LW | point | hook | 1 | MU ML SL | | NP | NP | 1 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I30030.59.3 | MU ML LW | point | point | 1 | MU ML SL | | NP | NP | NP | NP |
| I30030.60.1 | MU ML LW | triangle | hook | 0 | MU ML SL | 0 | triangular | line | 1 | 0 |
| I30030.60.2 | MU ML LW | point | hook | 0 | MU ML SL | 0 | triangular | line | 1 | 0 |
| I20183.61.1 | single line arms | point | defined foot | 0 | MU SL | 0 | no headdress | dot | 0 | 0 |
| I20183.61.2 | MU ML LW | triangle | NP | 0 | MU ML SL | 0 | oval | line | 0 | 1 |
| I20183.62.1 | single line arms | point | hook | 0 | MU ML SL | 0 | oval | line | 0 | 0 |
| I20183.62.2 | MU ML LW | circle | point | 0 | MU ML SL | 0 | oval | no infill | 1 | 0 |
| I20183.62.3 | single line arms | point | circle | 0 | MU ML SL | 0 | oval | line | 0 | 0 |
| I20183.63.1 | single line arms | point | hook | 0 | MU ML SL | 0 | oval | dot | 0 | 0 |
| I20183.64.1 | parallel line arms | circle | defined foot | 1 | fully defined legs | 0 | oval | dot | 1 | 0 |
| I20183.65.1 | single line arms | NP | NP | 0 | parallel line legs | 0 | circle | shaded | 0 | 0 |
| I20183.65.2 | single line arms | point | hook | 0 | parallel line legs | 0 | oval | no infill | 0 | 0 |
| I20183.66.1 | parallel line arms | circle | point | 1 | MU ML SL | | oval | shaded | 0 | 0 |
| I20183.67.1 | single line arms | point | defined foot | 1 | parallel line legs | 0 | oval | shaded | 0 | 0 |
| I20183.67.2 | single line arms | NP | defined foot | 0 | parallel line legs | 0 | oval | shaded | 0 | 0 |
| I20183.68.1 | parallel line arms | circle | hook | 1 | MU SL | 0 | unique | shaded | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| R10009.69.1 | parallel line arms | point | point | 1 | MU SL | 0 | oval | line | 1 | 0 |
| R10009.69.2 | parallel line arms | point | point | 1 | MU SL | 0 | oval | line | 1 | 0 |
| R10009.69.3 | parallel line arms | point | point | 1 | MU SL | 0 | oval | line | 1 | 0 |
| I10034.70.1 | single line arms | point | point | 0 | MU SL | 0 | tassel | line | 1 | 0 |
| I10034.70.2 | NP | NP | NP | NP | NP | NP | bird | no infill | NP | NP |
| I10034.70.3 | single line arms | point | point | 1 | MU SL | 0 | tassel | line | 1 | 0 |
| I10034.70.4 | single line arms | point | point | 1 | MU SL | 0 | tassel | line | 0 | 0 |
| I10034.70.5 | single line arms | point | point | 1 | MU SL | 0 | tassel | line | 0 | 0 |
| I10034.70.6 | single line arms | point | circle | 1 | MU ML SL | 0 | tassel | line | 0 | 0 |
| I10034.70.7 | single line arms | point | point | 0 | MU ML SL | 0 | tassel | line | 0 | 0 |
| I10034.71.1 | parallel line arms | point | point | 0 | MU ML SL | 0 | oval | line | 0 | 0 |
| I10034.72.1 | single line arms | circle | point | 1 | MU SL | | oval | no infill | 0 | 0 |
| I10046.73.1 | MU ML LW | circle | point | 0 | MU ML SL | 0 | Tube with lines emanating from the end | line | 1 | 0 |
| I10046.73.2 | MU ML LW | circle | hook | 0 | MU ML SL | combined leg form | tassel | line | 1 | 0 |
| I10046.73.3 | MU ML LW | point | hook | 0 | MU ML SL | combined leg form | tassel | line | 1 | 0 |
| I10046.74.1 | UU ML LW | NP | circle | 1 | MU ML SL | 0 | circle with tassel | shaded | NP | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I10046.75.1 | MU ML LW | point | point | 1 | MU ML SL | 0 | tassel | line | 1 | 0 |
| I10046.75.2 | MU ML LW | circle | hook | 1 | MU ML SL | | tassel | shaded | 1 | 0 |
| I10046.75.3 | MU ML LW | circle | hook | 0 | MU ML SL | 0 | oval | dot | 1 | 0 |
| I10046.75.4 | MU ML LW | point | point | 1 | MU ML SL | 0 | tassel | shaded | 1 | 0 |
| I10046.75.5 | NP | NP | hook | 0 | MU ML SL | 0 | oval | dot | NP | NP |
| I10046.75.6 | MU ML LW | circle | point | 1 | MU ML SL | 0 | tassel | shaded | 1 | 0 |
| I10046.75.7 | MU ML LW | circle | point | 1 | MU ML SL | 0 | tassel | shaded | 1 | 0 |
| I10046.75.8 | MU ML LW | point | point | 1 | MU ML SL | 0 | tassel | dot | 1 | 0 |
| I10046.76.1 | parallel line arms | circle | circle | 0 | parallel line legs | combined leg form | bird | shaded | 0 | 0 |
| I10046.76.2 | parallel line arms | circle | hook | 0 | single line legs | 0 | monster | shaded | 0 | 0 |
| I10046.77.1 | UU ML LW | circle | hook | 0 | MU ML SL | 0 | Three circles | no infill | 1 | 0 |
| I10046.77.2 | UU ML LW | NP | hook | 0 | MU ML SL | 0 | Three circles | line | 1 | 0 |
| I10067.78.1 | single line arms | point | point | 1 | single line legs | 0 | cartoon | line | 0 | 0 |
| I30172.79.1 | MU ML LW | triangle | hook | 0 | MU ML SL | combined leg form, bent boomerang | oval | line | 1 | 0 |
| I30172.79.2 | MU ML LW | triangle | NP | NP | NP | 0 | oval | line | 1 | 0 |
| I30172.79.3 | UU ML LW | point | hook | 1 | MU ML SL | Bent boomerang form | Tube with lines emanating from the end | line | 1 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I30175.81.1 | parallel line arms | circle | hook | 0 | MU ML SL | 0 | fuzzy short | dot | 0 | 0 |
| I30175.82.1 | MU ML LW | circle | point | 0 | MU ML SL | 0 | oval | dot | 0 | 0 |
| I30175.82.2 | MU ML LW | point | point | 0 | MU ML SL | 0 | oval | dot | NP | 0 |
| I30175.82.3 | MU ML LW | triangle | NP | NP | NP | 0 | macropod | no infill | 0 | 0 |
| I30175.82.4 | single line arms | triangle | circle | 0 | single line legs | 0 | cartoon | no infill | 1 | 0 |
| I30175.82.5 | MU ML LW | circle | point | 0 | MU ML SL | 0 | oval | dot | 1 | 0 |
| I30175.82.6 | single line arms | point | point | 0 | single line legs | 0 | macropod | no infill | 0 | 0 |
| I30175.83.1 | single line arms | point | point | 0 | MU SL | 0 | oval | dot | 0 | 0 |
| I30175.83.2 | UU ML LW | point | hook | 0 | MU SL | 0 | macropod | dot | 0 | 0 |
| I30175.84.1 | MU ML LW | circle | NP | 0 | NP | NP | oval | no infill | 0 | 0 |
| I10113.85.1 | NP | NP | hook | 0 | MU ML SL | 0 | oval | line | NP | 0 |
| I10113.86.1 | parallel line arms | NP | hook | 0 | MU SL | combined leg form | Tube with lines emanating from the end | no infill | 0 | 0 |
| I10113.87.1 | MU ML LW | triangle | hook | 0 | MU ML SL | 0 | oval | line | 1 | 0 |
| I10113.87.2 | MU ML LW | triangle | hook | 0 | MU ML SL | 0 | no headdress | NP | NP | 0 |
| I10113.87.3 | MU ML LW | point | hook | 0 | MU ML SL | 0 | oval | line | 1 | 0 |
| I10113.88.1 | MU ML LW | NP | point | 1 | MU SL | | oval | dot | 1 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I10113.89.1 | single line arms | circle | hook | 0 | single line legs | 0 | cartoon | no infill | 0 | 0 |
| I10113.89.2 | UU ML LW | point | circle | 1 | MU SL | | oval | dot | 1 | 0 |
| I10113.89.3 | single line arms | point | point | 1 | single line legs | 0 | NP | NA | 1 | 0 |
| I10113.89.4 | UU ML LW | circle | hook | 0 | MU ML SL | combined leg form | oval | dot | NP | 0 |
| I10113.89.5 | UU ML LW | circle | point | 1 | MU SL | | Tube with lines emanating from the end | line | NP | 0 |
| I10113.89.6 | UU ML LW | point | NP | 1 | MU SL | | rectangle | no infill | 1 | 1 |
| I10113.89.7 | parallel line arms | point | point | 1 | MU SL | | oval | dot | 1 | 0 |
| I10113.89.8 | UU ML LW | NP | hook | 1 | MU ML SL | 0 | Tube with lines emanating from the end | line | 1 | 0 |
| I10113.89.9 | single line arms | NP | NP | NP | NP | NP | unique | no infill | 0 | 1 |
| I10113.90.1 | MU ML LW | point | hook | 0 | MU ML SL | 0 | tall bun | no infill | 1 | 1 |
| I10113.90.2 | MU ML LW | point | point | 0 | MU ML SL | 0 | Dreads | no infill | 1 | 1 |
| I10113.91.1 | MU ML LW | triangle | point | 0 | MU ML SL | 0 | Dreads | no infill | 1 | 1 |
| I10113.92.1 | NP | NP | NP | 0 | NP | combined leg form | Tube with lines emanating from the end | line | 1 | 0 |
| I10113.93.1 | MU ML LW | point | NP | 0 | NP | 0 | NP | NP | 1 | 0 |
| I30181.94.1 | parallel line arms | circle | point | 1 | MU SL | | unique | shaded | 1 | 0 |
| I30181.95.1 | parallel line arms | circle | point | 0 | MU SL | 0 | oval | line | 1 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|
| I30181.95.2 | parallel line arms | point | point | 0 | MU SL | 0 | tassel | line | 1 | 0 |
| M080P.96.1 | UU ML LW | circle | defined foot | 1 | MU ML SL | | oval | shaded | 1 | 0 |
| M080P.96.2 | NP | NP | defined foot | 1 | MU SL | 0 | NP | NP | NP | NP |
| M080P.97.1 | NP | NP | defined foot | 1 | MU SL | 0 | NP | NP | NP | NP |

| DF motif # | Arm bands | Hair belt | Pubic covering | Pubic covering type | Spear | Spear type | Boomerang | Collection of boomerangs | Axe | Club | Vertically held t stick | Digging stick |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I10019.1.1 | 0 | 1 | 0 | NA | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I10019.2.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10019.3.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10019.3.2 | NP | NP | NP | NA | NP | NA | NP | NP | NP | NP | 0 | NP |
| I10019.3.3 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10019.3.4 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10019.4.1 | NP | NP | 0 | NA | NP | NA | NP | NA | 0 | NP | 0 | NP |
| I10007.5.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10007.5.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NP | 0 | 0 | 0 | 0 |
| I10007.5.3 | NP | NP | NP | NA | NP | NA | NP | NP | NP | NP | 0 | NP |
| I10007.6.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10028.7.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10012.8.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10012.8.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.9.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.9.2 | NP | NP | 0 | NA | NP | NA | NP | NA | 0 | NP | 0 | NP |
| I10034.10.1 | 1 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.10.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.11.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I10034.11.2 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| R10037.12.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| R10037.12.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10046.13.1 | 0 | 0 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 1 |
| I10063.14.1 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10063.14.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30173.15.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30173.15.2 | 0 | 1 | 1 | 13 | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30173.16.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30067.17.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30067.17.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.18.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.18.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.18.3 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.18.4 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.18.5 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.18.6 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.18.7 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.18.8 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.19.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.19.2 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30061.20.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 1 | NA | 0 | 0 | 0 | 0 |
| I20080.21.1 | 0 | 1 | 0 | NA | 0 | NA | 1 | NA | 0 | 0 | 0 | 0 |
| I20113.22.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20113.22.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20113.22.3 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20113.22.4 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I30091.23.1 | 1 | 1 | 1 | 1 | 1 | Multiple barb spear | 1 | 1 | 0 | 0 | 0 | 0 |
| I30091.24.1 | 1 | 1 | 1 | 2 | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30091.24.2 | 1 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30091.24.3 | 0 | 0 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30091.25.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I30091.25.2 | 1 | 0 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I20174.26.1 | 0 | 0 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10024.27.1 | 1 | 1 | 1 | 3 | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10024.27.2 | 0 | 0 | 0 | NA | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I10024.27.3 | 1 | NP | NP | NA | NP | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10024.27.4 | 0 | 1 | 1 | 4 | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10024.27.5 | 0 | 1 | 1 | 5 | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I10024.27.6 | 0 | 1 | 1 | 1.1 | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| R10021.28.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| R10021.29.1 | 1 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10039.30.1 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 1 | 0 |
| I10039.30.2 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 1 | 0 |
| I10039.30.3 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 1 | 0 |
| I10039.30.4 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 1 | 0 |
| I10039.31.1 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 1 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I10039.31.2 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10039.31.3 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10039.32.1 | 0 | 1 | 1 | 6 | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10039.32.2 | 0 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10039.32.3 | 0 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10039.32.4 | 0 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I20189.33.1 | 0 | 0 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I20189.33.2 | 1 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I20189.33.3 | 1 | 1 | 0 | NA | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I20189.33.4 | 1 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10049.34.1 | NP | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10049.35.1 | 0 | 1 | 1 | 7 | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10049.35.2 | 1 | 1 | 1 | 8 | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10049.35.3 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 1 | 0 | 0 |
| I10049.35.4 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30143.36.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I30143.37.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30143.37.2 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10053.38.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30145.39.1 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30145.40.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30145.40.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30145.40.3 | 0 | NP | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I30145.40.4 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10063.41.1 | NP | 1 | 1 | 8.2 | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10072.42.1 | NP | 0 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30150.43.1 | 1 | 1 | NP | NA | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 |
| R10037.44.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| R10037.45.1 | NP | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30183.46.1 | 1 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30183.46.2 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30183.46.3 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30183.46.4 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30183.47.1 | 0 | NP | 0 | NA | NP | NA | NP | NA | NP | NP | 0 | NP |
| I20125.48.1 | 0 | NP | 0 | NA | NP | NA | NP | NA | NP | NP | 0 | NP |
| I20125.48.2 | 0 | NP | 0 | NA | NP | NA | NP | NA | NP | NP | 0 | NP |
| I20125.48.3 | NP | 0 | 0 | NA | NP | NA | NP | NA | NP | NP | 0 | NP |
| R10015.49.1 | NP | NP | 1 | 9 | 0 | NA | NP | NA | NP | NP | 0 | NP |
| I30030.50.1 | 0 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30030.50.2 | 1 | 1 | 0 | NA | 1 | Single Shaft Spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I30030.51.1 | NP | 1 | 0 | NA | NP | NA | NP | NA | NP | NP | 0 | NP |
| I30030.52.1 | 0 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30030.52.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.52.3 | 0 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30030.53.1 | NP | NP | NP | NA | NP | NA | NP | NA | NP | NP | 0 | NP |
| I30030.53.2 | NP | 0 | 0 | NA | NP | NA | NP | NA | NP | NP | 0 | NP |
| I30030.53.3 | NP | 0 | 1 | 10 | NP | NA | NP | NA | NP | NP | 0 | NP |
| I30030.54.1 | NP | 1 | 0 | NA | NP | NA | 1 | NP | NP | NP | 0 | NP |
| I30030.54.2 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I30030.54.3 | 0 | 1 | 0 | NA | 1 | Multiple | 1 | 0 | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | barb spear | | | | | | |
| I30030.54.4 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I30030.54.5 | NP | NP | NP | NA | NP | NA | NP | NP | NP | NP | 0 | NP |
| I30030.55.1 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I30030.56.1 | 0 | 1 | 1 | 10.1 | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.56.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.57.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.58.1 | 1 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.59.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30030.59.2 | 0 | 1 | 1 | 1.2 | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30030.59.3 | 0 | 1 | NP | NA | 0 | NA | 1 | NA | 0 | 0 | 0 | 0 |
| I30030.60.1 | 0 | 1 | 1 | 8.3 | 1 | Single Shaft Spear | NP | NA | 0 | 0 | 0 | 0 |
| I30030.60.2 | 0 | 1 | 1 | 8.4 | 1 | Single Shaft Spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I20183.61.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20183.61.2 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 1 | 0 | 0 |
| I20183.62.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20183.62.2 | 0 | 1 | NP | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20183.62.3 | 0 | 1 | 1 | 8.1 | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I20183.63.1 | 0 | 0 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I20183.64.1 | 0 | 1 | 0 | NA | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I20183.65.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20183.65.2 | 0 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I20183.66.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20183.67.1 | 0 | 0 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I20183.67.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I20183.68.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| R10009.69.1 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 1 | 0 | 0 | 0 | 1 | 0 |
| R10009.69.2 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| R10009.69.3 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I10034.70.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.70.2 | NP | NP | NP | NA | NP | NA | NP | NA | NP | NP | 0 | NP |
| I10034.70.3 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.70.4 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.70.5 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.70.6 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.70.7 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.71.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10034.72.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10046.73.1 | 0 | 0 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10046.73.2 | 0 | 0 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10046.73.3 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10046.74.1 | 1 | 1 | 1 | 11 | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10046.75.1 | 0 | 0 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 1 | 0 |
| I10046.75.2 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 1 | 0 |
| I10046.75.3 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 1 | 1 | 0 | 0 | 0 | 0 |
| I10046.75.4 | 0 | NP | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I10046.75.5 | NP | NP | NP | NA | 1 | Single Shaft Spear | NP | NA | NP | NP | 0 | NP |
| I10046.75.6 | 0 | NP | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 1 | 0 |
| I10046.75.7 | 0 | NP | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10046.75.8 | 0 | 0 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10046.76.1 | 1 | 0 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I10046.76.2 | 1 | 0 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10046.77.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10046.77.2 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10067.78.1 | 0 | 0 | 0 | NA | 1 | Single Shaft Spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I30172.79.1 | 0 | 0 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30172.79.2 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30172.79.3 | 1 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30175.81.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30175.82.1 | 0 | 1 | 1 | 8.5 | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30175.82.2 | 1 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30175.82.3 | 0 | NP | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30175.82.4 | 0 | 1 | 1 | 1.3 | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30175.82.5 | 0 | 0 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30175.82.6 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30175.83.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I30175.83.2 | 1 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30175.84.1 | 0 | 0 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.85.1 | 0 | 1 | 1 | 12 | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I10113.86.1 | 0 | NP | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.87.1 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.87.2 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.87.3 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.88.1 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.89.1 | 0 | 0 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10113.89.2 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I10113.89.3 | 0 | 0 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I10113.89.4 | 0 | 1 | 0 | NA | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I10113.89.5 | NP | 1 | 0 | NA | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I10113.89.6 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.89.7 | 1 | 1 | 0 | NA | 1 | Single Shaft Spear | 1 | 0 | 0 | 0 | 0 | 0 |
| I10113.89.8 | 0 | 1 | 0 | NA | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| I10113.89.9 | 0 | 0 | 0 | NA | NP | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.90.1 | 0 | NP | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.90.2 | 0 | 0 | 0 | NA | 1 | Single Shaft Spear | 0 | NA | 0 | 0 | 0 | 1 |
| I10113.91.1 | 0 | NP | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.92.1 | 1 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| I10113.93.1 | 0 | 1 | 0 | NA | 0 | NA | 1 | 0 | 0 | 0 | 0 | 0 |
| I30181.94.1 | 0 | 1 | 0 | NA | 1 | Single Shaft Spear | 1 | 1 | 0 | 0 | 0 | 0 |
| I30181.95.1 | 0 | 1 | 0 | NA | 1 | Multiple barb spear | 0 | NA | 0 | 0 | 0 | 0 |
| I30181.95.2 | 0 | 1 | 0 | NA | 0 | NA | 0 | NA | 0 | 0 | 0 | 0 |
| M080P.96.1 | 1 | 1 | 0 | NA | 0 | NA | 1 | 1 | 0 | 0 | 0 | 0 |
| M080P.96.2 | NP | NP | NP | NA | 0 | NA | 1 | NP | 0 | 0 | 0 | 0 |
| M080P.97.1 | NP | NP | NP | NA | 0 | NA | 1 | NP | 0 | 0 | 0 | 0 |

| DF motif # | Hook stick | Round object | Small lithic(?) |
|---|---|---|---|
| I10019.1.1 | 0 | 0 | 0 |
| I10019.2.1 | 0 | 0 | 0 |
| I10019.3.1 | 0 | 0 | 0 |
| I10019.3.2 | 0 | 0 | NP |
| I10019.3.3 | 0 | 0 | 0 |
| I10019.3.4 | 0 | 0 | 0 |
| I10019.4.1 | 0 | 0 | NP |
| I10007.5.1 | 0 | 0 | 0 |
| I10007.5.2 | 0 | 0 | 0 |
| I10007.5.3 | 0 | 0 | NP |
| I10007.6.1 | 0 | 0 | 0 |
| I10028.7.1 | 0 | 0 | 0 |
| I10012.8.1 | 0 | 0 | 0 |
| I10012.8.2 | 0 | 0 | 0 |
| I10034.9.1 | 0 | 0 | 0 |
| I10034.9.2 | 0 | 0 | NP |
| I10034.10.1 | 0 | 0 | 0 |
| I10034.10.2 | 0 | 0 | 0 |
| I10034.11.1 | 0 | 0 | 0 |
| I10034.11.2 | 0 | 0 | 0 |
| R10037.12.1 | 0 | 0 | 0 |
| R10037.12.2 | 0 | 0 | 0 |
| I10046.13.1 | 0 | 0 | 0 |
| I10063.14.1 | 0 | 0 | 0 |
| I10063.14.2 | 0 | 0 | 0 |
| I30173.15.1 | 0 | 0 | 0 |
| I30173.15.2 | 0 | 0 | 0 |
| I30173.16.1 | 0 | 0 | 0 |

| | | | |
|---|---|---|---|
| I30067.17.1 | 0 | 0 | 0 |
| I30067.17.2 | 0 | 0 | 0 |
| I30030.18.1 | 0 | 0 | 0 |
| I30030.18.2 | 0 | 0 | 0 |
| I30030.18.3 | 0 | 0 | 0 |
| I30030.18.4 | 0 | 0 | 0 |
| I30030.18.5 | 0 | 0 | 0 |
| I30030.18.6 | 0 | 0 | 0 |
| I30030.18.7 | 0 | 0 | 0 |
| I30030.18.8 | 0 | 0 | 0 |
| I30030.19.1 | 0 | 0 | 0 |
| I30030.19.2 | 0 | 0 | 0 |
| I30061.20.1 | 0 | 0 | 0 |
| I20080.21.1 | 0 | 0 | 0 |
| I20113.22.1 | 0 | 0 | 0 |
| I20113.22.2 | 0 | 0 | 0 |
| I20113.22.3 | 0 | 0 | 0 |
| I20113.22.4 | 0 | 0 | 0 |
| I30091.23.1 | 0 | 0 | 0 |
| I30091.24.1 | 0 | 0 | 0 |
| I30091.24.2 | 0 | 0 | 0 |
| I30091.24.3 | 0 | 0 | 0 |
| I30091.25.1 | 0 | 0 | 0 |
| I30091.25.2 | 0 | 0 | 0 |
| I20174.26.1 | 0 | 0 | 0 |
| I10024.27.1 | 0 | 0 | 0 |
| I10024.27.2 | 0 | 0 | 0 |
| I10024.27.3 | 0 | 0 | 0 |
| I10024.27.4 | 0 | 0 | 0 |
| I10024.27.5 | 0 | 0 | 0 |
| I10024.27.6 | 0 | 0 | 0 |
| R10021.28.1 | 0 | 0 | 0 |

| | | | |
|---|---|---|---|
| R10021.29.1 | 0 | 0 | 0 |
| I10039.30.1 | 0 | 1 | 0 |
| I10039.30.2 | 0 | 1 | 0 |
| I10039.30.3 | 0 | 1 | 0 |
| I10039.30.4 | 0 | NP | 0 |
| I10039.31.1 | 0 | 0 | 0 |
| I10039.31.2 | 0 | 0 | 0 |
| I10039.31.3 | 0 | 0 | 0 |
| I10039.32.1 | 0 | 0 | 0 |
| I10039.32.2 | 0 | 0 | 0 |
| I10039.32.3 | 0 | 0 | 0 |
| I10039.32.4 | 0 | NP | 0 |
| I20189.33.1 | 0 | 0 | 0 |
| I20189.33.2 | 0 | 0 | 0 |
| I20189.33.3 | 0 | 0 | 0 |
| I20189.33.4 | 0 | NP | 0 |
| I10049.34.1 | 0 | 0 | 0 |
| I10049.35.1 | 0 | 0 | 0 |
| I10049.35.2 | 0 | 0 | 0 |
| I10049.35.3 | 0 | 0 | 0 |
| I10049.35.4 | 0 | NP | 0 |
| I30143.36.1 | 0 | 0 | 0 |
| I30143.37.1 | 0 | 0 | 0 |
| I30143.37.2 | 0 | 0 | 0 |
| I10053.38.1 | 0 | 0 | 0 |
| I30145.39.1 | 0 | 0 | 0 |
| I30145.40.1 | 0 | 0 | 0 |
| I30145.40.2 | 0 | 0 | 0 |
| I30145.40.3 | 0 | 0 | 0 |
| I30145.40.4 | 0 | NP | 0 |
| I10063.41.1 | 0 | 0 | 0 |
| I10072.42.1 | 0 | 0 | 0 |

| | | | |
|---|---|---|---|
| I30150.43.1 | 0 | 0 | 0 |
| R10037.44.1 | 0 | 0 | 0 |
| R10037.45.1 | 0 | 0 | 0 |
| I30183.46.1 | 0 | 0 | 0 |
| I30183.46.2 | 0 | 0 | 0 |
| I30183.46.3 | 0 | 0 | 0 |
| I30183.46.4 | 0 | 0 | 0 |
| I30183.47.1 | 0 | NP | NP |
| I20125.48.1 | 0 | NP | NP |
| I20125.48.2 | 0 | NP | NP |
| I20125.48.3 | 0 | NP | NP |
| R10015.49.1 | 0 | NP | NP |
| I30030.50.1 | 0 | 0 | 0 |
| I30030.50.2 | 0 | 0 | 0 |
| I30030.51.1 | 0 | NP | NP |
| I30030.52.1 | 0 | 0 | 0 |
| I30030.52.2 | 0 | 0 | 0 |
| I30030.52.3 | 0 | 0 | 0 |
| I30030.53.1 | 0 | NP | NP |
| I30030.53.2 | 0 | NP | NP |
| I30030.53.3 | 0 | NP | NP |
| I30030.54.1 | 0 | NP | NP |
| I30030.54.2 | 0 | 0 | 0 |
| I30030.54.3 | 0 | 0 | 0 |
| I30030.54.4 | 0 | 0 | 0 |
| I30030.54.5 | 0 | NP | NP |
| I30030.55.1 | 0 | 0 | 0 |
| I30030.56.1 | 0 | 0 | 1 |
| I30030.56.2 | 0 | 0 | 0 |
| I30030.57.1 | 0 | 0 | 0 |
| I30030.58.1 | 0 | 0 | 0 |
| I30030.59.1 | 0 | 0 | 0 |

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|---|---|---|---|
| I30030.59.2 | 0 | 0 | 0 |
| I30030.59.3 | 0 | 0 | 0 |
| I30030.60.1 | 0 | 0 | 0 |
| I30030.60.2 | 0 | 0 | 0 |
| I20183.61.1 | 0 | 0 | 0 |
| I20183.61.2 | 0 | 0 | 0 |
| I20183.62.1 | 0 | 0 | 0 |
| I20183.62.2 | 0 | 0 | 0 |
| I20183.62.3 | 0 | 0 | 0 |
| I20183.63.1 | 0 | 0 | 0 |
| I20183.64.1 | 0 | 0 | 0 |
| I20183.65.1 | 0 | 0 | 0 |
| I20183.65.2 | 0 | 0 | 0 |
| I20183.66.1 | 1 | 0 | 0 |
| I20183.67.1 | 0 | 0 | 0 |
| I20183.67.2 | 0 | 0 | 0 |
| I20183.68.1 | 0 | 0 | 0 |
| R10009.69.1 | 0 | 0 | 0 |
| R10009.69.2 | 0 | 0 | 0 |
| R10009.69.3 | 0 | 0 | 0 |
| I10034.70.1 | 0 | 0 | 0 |
| I10034.70.2 | 0 | NP | NP |
| I10034.70.3 | 0 | 0 | 0 |
| I10034.70.4 | 1 | 0 | 0 |
| I10034.70.5 | 0 | 0 | 0 |
| I10034.70.6 | 0 | 0 | 0 |
| I10034.70.7 | 0 | 0 | 0 |
| I10034.71.1 | 0 | 0 | 0 |
| I10034.72.1 | 0 | 0 | 0 |
| I10046.73.1 | 0 | 0 | 0 |
| I10046.73.2 | 0 | 0 | 0 |
| I10046.73.3 | 0 | 0 | 0 |

| | | | |
|---|---|---|---|
| I10046.74.1 | 0 | 0 | 0 |
| I10046.75.1 | 0 | 0 | 0 |
| I10046.75.2 | 0 | 1 | 0 |
| I10046.75.3 | 0 | 0 | 0 |
| I10046.75.4 | 0 | 0 | 0 |
| I10046.75.5 | 0 | NP | NP |
| I10046.75.6 | 0 | 0 | 0 |
| I10046.75.7 | 0 | 0 | 0 |
| I10046.75.8 | 0 | 0 | 0 |
| I10046.76.1 | 0 | 0 | 0 |
| I10046.76.2 | 0 | 0 | 0 |
| I10046.77.1 | 0 | 0 | 0 |
| I10046.77.2 | 0 | 0 | 0 |
| I10067.78.1 | 0 | 1 | 0 |
| I30172.79.1 | 0 | 0 | 0 |
| I30172.79.2 | 0 | 0 | 0 |
| I30172.79.3 | 0 | 0 | 0 |
| I30175.81.1 | 0 | 0 | 0 |
| I30175.82.1 | 0 | 0 | 0 |
| I30175.82.2 | 0 | 0 | 0 |
| I30175.82.3 | 0 | 0 | 0 |
| I30175.82.4 | 0 | 0 | 0 |
| I30175.82.5 | 0 | 0 | 0 |
| I30175.82.6 | 0 | 0 | 0 |
| I30175.83.1 | 0 | 0 | 0 |
| I30175.83.2 | 0 | 0 | 0 |
| I30175.84.1 | 0 | 0 | 0 |
| I10113.85.1 | 0 | 0 | 0 |
| I10113.86.1 | 0 | 0 | 0 |
| I10113.87.1 | 0 | 0 | 0 |
| I10113.87.2 | 0 | 0 | 0 |
| I10113.87.3 | 0 | 0 | 0 |

| | | | |
|---|---|---|---|
| I10113.88.1 | 0 | 0 | 0 |
| I10113.89.1 | 0 | 0 | 0 |
| I10113.89.2 | 0 | 0 | 0 |
| I10113.89.3 | 0 | 0 | 0 |
| I10113.89.4 | 0 | 0 | 0 |
| I10113.89.5 | 0 | 0 | 0 |
| I10113.89.6 | 0 | 0 | 0 |
| I10113.89.7 | 0 | 0 | 0 |
| I10113.89.8 | 0 | 0 | 0 |
| I10113.89.9 | 0 | 0 | 0 |
| I10113.90.1 | 0 | 0 | 0 |
| I10113.90.2 | 0 | 0 | 0 |
| I10113.91.1 | 0 | 0 | 0 |
| I10113.92.1 | 0 | 0 | 0 |
| I10113.93.1 | 0 | 0 | 0 |
| I30181.94.1 | 0 | 0 | 0 |
| I30181.95.1 | 0 | 0 | 0 |
| I30181.95.2 | 0 | 0 | 0 |
| M080P.96.1 | 0 | 0 | 0 |
| M080P.96.2 | 0 | 0 | 0 |
| M080P.97.1 | 0 | 0 | 0 |

## Complete list of quantitative data recorded from the Dynamic Figure motifs of Jabiluka

| | Groin to neck (body) | Combined arm (forward) | Combined arm (backward) | Combined leg (forward) | Combined leg (backward) | Headdress height (no head) |
|---|---|---|---|---|---|---|
| I10019.1.1 | 16.5 | 36.9 | 35.8 | 34.5 | 26.6 | 24.9 |
| I10019.2.1 | 11.6 | 15.2 | 17.7 | 17.7 | 17.3 | 14.5 |
| I10019.3.3 | 14.0 | 17.3 | 22.5 | 19.7 | 18.9 | 3.6 |
| I10012.8.1 | 15.6 | 18.6 | 18.7 | 19.3 | 16.3 | 6. |
| I10012.8.1 | 14.0 | 18.5 | 14.5 | 17.8 | 18.0 | 11 |
| I10034.10.1 | 7.4 | 12.3 | 12.1 | 13.4 | 12.4 | 5.1 |
| I10034.10.2 | 6. | 10.0 | 10.0 | 12.4 | 13.6 | 0.5 |
| I10046.13.1 | 11.6 | 25.3 | 24.2 | 20.5 | 20.0 | 1.0 |
| I30173.15.1 | 27.1 | 37.4 | 36.9 | 37.4 | 38.8 | 25.0 |
| I30173.16.1 | 13.2 | 16.2 | 22.0 | 23.0 | 18.8 | 4.7 |
| I30030.18.1 | 8.3 | 6.4 | 7.3 | 8.6 | 10.2 | 3.6 |
| I30030.18.2 | 6.4 | 10.7 | 9.9 | 11.5 | 10.5 | 3.3 |
| I30030.18.4 | 7.0 | 10.7 | 10.1 | 9.1 | 9.2 | 12.6 |
| I30030.18.5 | 9.1 | 11.0 | 10.7 | 11.9 | 11.0 | 10.1 |
| I30030.18.6 | 8.0 | 11.6 | 11.5 | 11.5 | 12.7 | 14.1 |
| I30030.18.7 | 8.0 | 14.3 | 13.1 | 12.1 | 11. | 14.8 |
| I30030.19.1 | 7.1 | 10. | 12.2 | 12.2 | 14.2 | 11.3 |
| I20113.22.1 | 8.2 | 18.7 | 17.9 | 27.4 | 20.9 | 5.0 |
| I20113.22.2 | 4.6 | 10.7 | 13.6 | 16.2 | 19.6 | 3.8 |
| I30091.25.1 | 9.3 | 30.3 | 29.4 | 26.0 | 23.6 | 24.0 |
| R10021.28.1 | 17.3 | 18.4 | 23.1 | 21.2 | 25.9 | 16.8 |
| I10039.31.2 | 6.7 | 10.5 | 9.4 | 9.4 | 7.6 | 7.7 |
| I10039.32.1 | 8.9 | 17.8 | 15.5 | 16.8 | 16.8 | 4.8 |

| | | | | | | |
|---|---|---|---|---|---|---|
| I10039.32.2 | 10.7 | 16. | 17.6 | 18.8 | 19.7 | 5.8 |
| I10039.32.3 | 10.9 | 15.4 | 15.3 | 23.4 | 19.2 | 6.9 |
| I10039.32.4 | 8.6 | 16.0 | 16.2 | 21.9 | 22.6 | 11.4 |
| I20189.33.3 | 12.8 | 26.0 | 32.2 | 29.3 | 29.8 | 23.5 |
| I20189.33.4 | 11.5 | 20.2 | 24.5 | 18.5 | 21.6 | 19.2 |
| I10049.35.1 | 9.4 | 10.4 | 9.1 | 11.1 | 12.2 | 6.0 |
| I10049.35.2 | 15.8 | 22.9 | 23.6 | 19.1 | 16.3 | 9.0 |
| I10049.35.4 | 6.7 | 12.7 | 12.4 | 10.3 | 12.2 | 4.4 |
| I30143.36.1 | 9.6 | 15.0 | 18.4 | 15.9 | 10.5 | 7.5 |
| I30143.37.1 | 12.4 | 20.2 | 20.9 | 18.7 | 19.1 | 17.9 |
| I30145.39.1 | 14.0 | 17.7 | 18.6 | 19.6 | 19.1 | 11.1 |
| I30145.40.1 | 16.9 | 18.4 | 16. | 28.3 | 24.1 | 22.4 |
| I30145.40.3 | 8.4 | 17.3 | 17.3 | 14.1 | 19.2 | 7.1 |
| I30145.40.4 | 13.4 | 23.2 | 18.8 | 23.5 | 23.8 | 3.1 |
| I30183.46.2 | 11.3 | 15.2 | 14.8 | 16.7 | 14.7 | 3.7 |
| I30183.46.4 | 10.9 | 18.4 | 18.7 | 19.7 | 17.3 | 4.2 |
| I20125.48.1 | 6. | 9.5 | 9.8 | 11.6 | 11.8 | 7.2 |
| I30030.56.1 | 26.4 | 36.0 | 35.5 | 36.2 | 33.0 | 6.6 |
| I30030.57.1 | 17.9 | 32.7 | 30.8 | 28.6 | 36.2 | 10.3 |
| I30030.59.1 | 10.6 | 20 | 18.0 | 13.9 | 15.8 | 7.2 |
| I30030.60.1 | 29.6 | 59. | 59.9 | 55.7 | 53 | 32.3 |
| I20183.62.3 | 17.9 | 24.4 | 21.9 | 22.5 | 22. | 17.2 |
| I20183.64.1 | 18.1 | 19.5 | 20.9 | 22.6 | 20.1 | 6.9 |
| I20183.68.1 | 9.0 | 15. | 14.4 | 11.7 | 11.2 | 1.4 |
| R10009.69.2 | 8.7 | 13.2 | 20.7 | 15.01 | 15.1 | 12.1 |
| I10034.70.4 | 10.6 | 9.5 | 12.6 | 16.7 | 15.9 | 6.6 |
| I10034.70.5 | 8.8 | 10.3 | 12.4 | 16.5 | 16.0 | 5.9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| I10034.71.1 | 11.3 | 16.1 | 16.6 | 17.7 | 15. | 13.5 |
| I10034.72.1 | 6.8 | 11.2 | 12.0 | 17.2 | 13.9 | 13.4 |
| I10046.73.1 | 17.1 | 32.2 | 30.9 | 28.1 | 19.4 | 12.8 |
| I10046.73.2 | 18.4 | 31.7 | 28.9 | 29.6 | 28.3 | 17.0 |
| I10046.74.1 | 12.5 | 18.7 | 20.3 | 20 | 20.6 | 12.0 |
| I10046.75.1 | 17.8 | 36.5 | 36.0 | 36.0 | 36.9 | 29.3 |
| I10046.75.2 | 19.5 | 26.2 | 25.3 | 27.6 | 23.7 | 22.0 |
| I10046.75.6 | 29.1 | 27.8 | 25.6 | 30.5 | 25.0 | 13.6 |
| I30172.79.3 | 11.2 | 19.1 | 18.0 | 18.0 | 16.8 | 16.0 |
| I30175.81.1 | 11.6 | 21.1 | 23.8 | 14.6 | 13.9 | 4.2 |
| I30175.82.1 | 20.5 | 30. | 27.3 | 25.7 | 24.9 | 22.0 |
| I30175.82.2 | 15.7 | 20.1 | 16.1 | 16.6 | 13.6 | 18.7 |
| I30175.82.5 | 18.3 | 24.5 | 23.6 | 22.5 | 23.2 | 20.8 |
| I30175.83.1 | 6.0 | 8.5 | 9.5 | 7.3 | 9.4 | 10.8 |
| I10113.86.1 | 9.0 | 21.2 | 19.5 | 9.7 | 11.2 | 5.9 |
| I10113.87.1 | 10.7 | 20.7 | 17.1 | 18.4 | 14.7 | 12.6 |
| I10113.87.3 | 9.5 | 14.2 | 14.1 | 14.9 | 15.7 | 8.7 |
| I10113.89.2 | 13.5 | 21.4 | 24.2 | 21.8 | 24.1 | 13.2 |
| I10113.89.4 | 40.8 | 43.9 | 46.8 | 43.7 | 37.7 | 17.8 |
| I10113.89.8 | 12.8 | 27 | 27.5 | 25.5 | 23.8 | 13.0 |
| I30181.94.1 | 5.5 | 14.1 | 9.8 | 12.1 | 13.6 | 5.04 |
| I30181.95.2 | 16.2 | 23.9 | 23.6 | 39.0 | 29.5 | 23.2 |
| M080P.96.1 | 14.8 | 17.4 | 16.1 | 16.3 | 16.2 | 10.3 |

## Complete list of data recorded from the Dynamic Figure scenes of Jabiluka

| Site | DF scene # | Motif count | Partial motifs | DF per scene | Fauna | Activity | Hand stencils & prints | Material culture stencils | Stencil superimposition | Range of head adornments | Headdress types | Scene action indicators | Superimposition of DF motifs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0007 M13 10/07/2013 | 5 | 3 | 1 | 4 | Emu | In motion (without weapons) | 3MF RH, RH, LH | Symmetrical boomerang | FALSE | TRUE | oval, rectangle, leaf | FALSE | Under Emu |
| I1 0007 M13 10/07/2013 | 6 | 1 | 0 | 1 | FALSE | In motion (without weapons) | 3MF RH, RH, LH | | FALSE | not applicable | leaf | FALSE | potentially |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0012 M13 10/07/2013 | 8 | 2 | 0 | 2 | FALSE | Sexual intercourse | FALSE | | not applicable | TRUE | oval | FALSE | FALSE |
| I1 0019 M13 12/07/2013 | 1 | 1 | 0 | 1 | FALSE | In motion (with weapons) | LH | | Above figures | not applicable | oval | FALSE | TRUE |
| I1 0019 M13 12/07/2013 | 2 | 1 | 0 | 1 | FALSE | In motion (without weapons) | FALSE | | not applicable | not applicable | oval | FALSE | TRUE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0019 M13 12/07/2013 | 3 | 4 | 1 | 5 | FALSE | Complex activity | LH | | Below figures | NP | not applicable | FALSE | FALSE |
| I1 0019 M13 12/07/2013 | 4 | 1 | 0 | 1 | FALSE | NP | FALSE | | not applicable | not applicable | not applicable | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0024 M12 14/07/2013 | 27 | 6 | 0 | 6 | FALSE | Complex activity | LH | | Under anthropomorphs | FALSE | Oval | FALSE | TRUE |
| I1 0034 N13 15/07/2013 | 9 | 2 | 0 | 2 | FALSE | In motion (without weapons) | FALSE | | not applicable | FALSE | not applicable | FALSE | FALSE |
| I1 0034 N13 15/07/2013 | 10 | 2 | 0 | 2 | FALSE | Sexual intercourse | RH | | Hand Stencils below the scene | TRUE | fan | FALSE | Hand seems to be below the figures |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0034 N13 15/07/2013 | 11 | 2 | 0 | 2 | FALSE | Sexual intercourse | FALSE | | not applicable | TRUE | oval | FALSE | FALSE |
| I1 0034 N13 15/07/2013 | 70 | 7 | 1 | 8 | FALSE | In motion (with weapons) | 3MF LH, LH | | Beneath Dynamic Figures | FALSE | tassel | FALSE | TRUE |
| I1 0034 N13 15/07/2013 | 71 | 1 | 0 | 1 | FALSE | Stationary | FALSE | | not applicable | not applicable | oval | FALSE | FALSE |
| I1 0034 N13 15/07/2013 | 72 | 1 | 0 | 1 | FALSE | In motion (without weapons) | FALSE | | not applicable | not applicable | oval | Dots emanating from Dynamic Figure's mouth | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0039 N13 18/07/2013 | 30 | 4 | 1 | 5 | FALSE | In motion (with weapons) | FALSE | | FALSE | FALSE | tassel | Dots emanating from body and neck | FALSE |
| I1 0039 N13 18/07/2013 | 31 | 3 | 0 | 3 | Kangaroo | Hunting | FALSE | | FALSE | NP | tassel | FALSE | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0039 N13 18/07/2013 | 32 | 4 | 2 | 6 | FALSE | Campfire | 3MF RH | | TRUE | TRUE | tube with lines eminating from the end, oval | Asterisks | TRUE |
| I1 0046 R16 20/07/2013 | 13 | 1 | 1 | 2 | FALSE | In motion (with weapons) | FALSE | | not applicable | NP | bun | FALSE | FALSE |
| I1 0046 R16 20/07/2013 | 73 | 3 | 1 | 4 | FALSE | Complex activity | 3MF RH, RH | | Beneath Dynamic Figures | TRUE | Tube with lines eminating from the end, tassel | Dots emanating from Dynamic Figure's neck and head | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0046 R16 20/07/2013 | 74 | 1 | 0 | 1 | FALSE | In motion (without weapons) | FALSE | | FALSE | not applicable | Circle with tassels | FALSE | FALSE |
| I1 0046 R16 20/07/2013 | 75 | 8 | 0 | 8 | emu tracks & macropod tracks | Tracking | RH, LH | | FALSE | TRUE | oval, tassel | Tracks, Dots emanating from Dynamic Figure's neck and head | TRUE |
| I1 0046 R16 20/07/2013 | 76 | 2 | 1 | 3 | FALSE | Stationary | LH | | FALSE | TRUE | not applicable | FALSE | TRUE |
| I1 0046 R16 20/07/2013 | 77 | 2 | 0 | 2 | FALSE | Sitting | FALSE | | FALSE | FALSE | Three circles | FALSE | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0049 R16 21072013 | 34 | 1 | 0 | 1 | FALSE | In motion (without weapons) | 3MF RH, 3MF LH | | FALSE | not applicable | oval | FALSE | FALSE |
| I1 0049 R16 21072013 | 35 | 4 | 2 | 6 | FALSE | punishment scene | 3MF LH, RH | | Below figures | TRUE | Circle with tassels, rectangle | Dots emanating from Therianthrope mouth, and around the Dynamic Figures | FALSE |
| I1 0053 O14 23/07/2013 | 38 | 1 | 0 | 1 | FALSE | In motion (with weapons) | FALSE | | FALSE | not applicable | Tube with tassel | FALSE | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0063 12/06/2014 | 14 | 2 | 0 | 2 | FALSE | In motion (with weapons) | FALSE | | not applicable | TRUE | no headdress | FALSE | FALSE |
| I1 0063 12/06/2014 | 41 | 1 | 0 | 1 | FALSE | In motion (with weapons) | LH | Boomerang | FALSE | not applicable | NP | FALSE | FALSE |
| I1 0067 Unknown 13/06/2014 | 78 | 1 | 0 | 1 | FALSE | In motion (with weapons) | FALSE | | FALSE | not applicable | not applicable | FALSE | FALSE |
| I1 0072 Unknown 14/06/2014 | 42 | 1 | 0 | 1 | FALSE | Stationary | FALSE | | FALSE | not applicable | oval | FALSE | FALSE |
| I1 0113 Q13 22/06/2014 | 85 | 1 | 0 | 1 | FALSE | In motion (without weapons) | LH P | | FALSE | not applicable | oval | FALSE | FALSE |
| I1 0113 Q13 22/06/2014 | 86 | 1 | 0 | 1 | FALSE | In motion (without weapons) | FALSE | | FALSE | not applicable | Tube with lines eminating from | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | the end | | |
| I1 0113 Q13 22/06/2014 | 87 | 3 | 2 | 5 | FALSE | Stationary | FALSE | | FALSE | TRUE | no headdress, oval | FALSE | FALSE |
| I1 0113 Q13 22/06/2014 | 88 | 1 | 0 | 1 | FALSE | In motion (with weapons) | H | | below Dynamic Figure | not applicable | oval | FALSE | FALSE |
| I1 0113 Q13 22/06/2014 | 89 | 9 | 0 | 9 | FALSE | Complex activity | RH P | | hand prints over Dynamic Figures | TRUE | oval, rectangle, Tube with lines eminating from the end, | Dots emanating from Therianthrope mouth | TRUE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I1 0113 Q13 22/06/2014 | 90 | 2 | 2 | 4 | FALSE | In motion (with weapons) | RH P | | FALSE | NP | not applicable | FALSE | TRUE |
| I1 0113 Q13 22/06/2014 | 91 | 1 | 0 | 1 | FALSE | Stationary | FALSE | | FALSE | not applicable | not applicable | FALSE | FALSE |
| I1 0113 Q13 22/06/2014 | 92 | 1 | 0 | 1 | FALSE | Stationary | FALSE | | FALSE | not applicable | Tube with lines eminating from the end | FALSE | FALSE |
| I1 0113 Q13 22/06/2014 | 93 | 1 | 1 | 2 | FALSE | Stationary | FALSE | | FALSE | NP | NP | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I2 0080 J9 29/06/2012 | 21 | 1 | 0 | 1 | Echidna | In motion (with weapons) | FALSE | | FALSE | not applicable | leaf | FALSE | FALSE |
| I2 0113 E9 05/07/2012 | 22 | 4 | 0 | 4 | FALSE | Complex activity | LH | | Yes, underder Dynamic Figures | TRUE | oval, tassel, circle | FALSE | FALSE |
| I2 0125 E9 06/07/2012 | 48 | 3 | 0 | 3 | FALSE | In motion (without weapons) | FALSE | | FALSE | TRUE | Tassel, Tube with lines eminating from the end | FALSE | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I2 0174 M12 11/07/2013 | 26 | 1 | 1 | 2 | FALSE | In motion (with weapons) | FALSE | | not applicable | NP | Tube with tassel | FALSE | FALSE |
| I2 0183 M12 12/07/2013 | 61 | 2 | 0 | 2 | FALSE | In motion (with weapons) | 3MFLH | | Below figures | TRUE | oval | FALSE | FALSE |
| I2 0183 M12 12/07/2013 | 62 | 3 | 1 | 4 | FALSE | In motion (with weapons) | RH | | Below figures | FALSE | oval | FALSE | TRUE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I2 0183 M12 12/07/2013 | 63 | 1 | 0 | 1 | Snake | hunting | FALSE | | not applicable | not applicable | No headdress | FALSE | FALSE |
| I2 0183 M12 12/07/2013 | 64 | 1 | 0 | 1 | FALSE | In motion (with weapons) | LH, RH P, LH P | | below and above figures | not applicable | oval | FALSE | FALSE |
| I2 0183 M12 12/07/2013 | 65 | 2 | 2 | 4 | FALSE | In motion (with weapons) | FALSE | | FALSE | TRUE | oval, circle | FALSE | FALSE |
| I2 0183 M12 12/07/2013 | 66 | 1 | 0 | 1 | kangaroo | hunting | FALSE | | FALSE | not applicable | Oval | FALSE | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I2 0183 M12 12/07/2013 | 67 | 2 | 1 | 3 | FALSE | Stationary | FALSE | | FALSE | FALSE | oval | FALSE | FALSE |
| I2 0183 M12 12/07/2013 | 68 | 1 | 0 | 1 | FALSE | In motion (with weapons) | FALSE | | FALSE | not applicable | Unique | FALSE | FALSE |
| I2 0189 Unknown 20/07/2013 | 33 | 4 | 0 | 4 | Kangaroo tracks | Tracking | FALSE | | FALSE | FALSE | oval | Tracks | TRUE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0028 N14 16/06/2012 | 7 | 1 | 0 | 1 | Snake | In motion (without weapons) | FALSE | | not applicable | not applicable | oval | FALSE | Cannot determine if the snake, identified by Paul Taçon, is above or below the Dynamic Figure. |
| I3 0030 N13 16/06/2012 | 18 | 8 | 3 | 11 | FALSE | Complex activity | RH, LH | | Yes, right hand under figures | TRUE | oval, hook, unique | FALSE | FALSE |
| I3 0030 N13 16/06/2012 | 19 | 2 | 0 | 2 | FALSE | Complex activity | RH | | Yes, unknown | TRUE | oval, no headdress | Asterisks | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0030 N13 16/06/2012 | 50 | 2 | 1 | 3 | FALSE | In motion (with weapons) | H | | FALSE | TRUE | oval, rectangle | FALSE | TRUE |
| I3 0030 N13 16/06/2012 | 51 | 1 | 0 | 1 | FALSE | In motion (with weapons) | H | | FALSE | not applicable | oval | FALSE | FALSE |
| I3 0030 N13 16/06/2012 | 52 | 3 | 0 | 3 | FALSE | Complex activity | FALSE | | FALSE | TRUE | oval, no headdress | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0030 N13 16/06/2012 | 53 | 3 | 1 | 4 | Kangaroo | NP | 3MF LH, RH | | ontop and beneath | NP | NP | FALSE | TRUE |
| I3 0030 N13 16/06/2012 | 54 | 5 | 0 | 5 | FALSE | In motion (with weapons) | 2MF RH | | Below figures | FALSE | fuzzy short | Dots around the Dynamic Figure's body | TRUE |
| I3 0030 N13 16/06/2012 | 55 | 1 | 1 | 2 | FALSE | In motion (with weapons) | LH | | FALSE | NP | rectangle | FALSE | FALSE |
| I3 0030 N13 16/06/2012 | 56 | 2 | 0 | 2 | FALSE | Complex activity | LH | | under figures | TRUE | fan, no headdress | Dots across the Dynamic Figure's body | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0030 N13 16/06/2012 | 57 | 1 | 0 | 1 | Kangaroo tracks | Sitting | RH | Boomerang | TRUE | not applicable | circle | tracks | FALSE |
| I3 0030 N13 16/06/2012 | 58 | 1 | 0 | 1 | FALSE | In motion (with weapons) | 3MF LH, RH, LH | | NP | NP | | FALSE | FALSE |
| I3 0030 N13 16/06/2012 | 59 | 3 | 1 | 4 | FALSE | In motion (with weapons) | 3MF LH, RH, LH | Boomerang | NP | NP | Oval | FALSE | FALSE |
| I3 0030 N13 16/06/2012 | 60 | 2 | 0 | 2 | Thylacine | Complex activity | 2MF LH | | FALSE | FALSE | Triangular | FALSE | FALSE |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0061 I8 25/06/2012 | 20 | 1 | 0 | 1 | FALSE | Stationary | FALSE | | FALSE | not applicable | Unique | FALSE | FALSE |
| I3 0067 J11 26/06/2012 | 17 | 2 | 0 | 2 | FALSE | Complex activity | FALSE | | FALSE | FALSE | Bald | FALSE | FALSE |
| I3 0091 D12 05/07/2012 | 23 | 1 | 0 | 1 | FALSE | Tracking | FALSE | | FALSE | not applicable | oval | Tracks | FALSE |
| I3 0091 D12 05/07/2012 | 24 | 3 | 2 | 5 | FALSE | In motion (with weapons) | FALSE | | FALSE | FALSE | oval | Dots emanating from Therianthrope mouth | TRUE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0091 D12 05/07/2012 | 25 | 2 | 2 | 4 | FALSE | In motion (with weapons) | FALSE | | not applicable | FALSE | oval | FALSE | FALSE |
| I3 0143 R12 23072013 | 36 | 1 | 0 | 1 | Thylacine | Hunting | FALSE | | FALSE | FALSE | oval | FALSE | FALSE |
| I3 0143 R12 23072013 | 37 | 2 | 0 | 2 | FALSE | In motion (with weapons) | FALSE | | FALSE | FALSE | oval | Dots emanating from Dynamic Figure's mouth | FALSE |
| I3 0145 R12 23/07/2013 | 39 | 1 | 0 | 1 | FALSE | In motion (with weapons) | FALSE | | FALSE | not applicable | oval | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0145 R12 23/07/2013 | 40 | 4 | 0 | 4 | FALSE | In motion (with weapons) | RH, LH | Boomerang | FALSE | FALSE | oval | FALSE | FALSE |
| I3 0150 Unknown 16/06/2014 | 43 | 1 | 0 | 1 | FALSE | Stationary | LH | Boomerang | Below figures | not applicable | oval | FALSE | FALSE |
| I3 0150 Unknown 16/06/2014 | 44 | 1 | 0 | 1 | FALSE | Stationary | FALSE | | FALSE | not applicable | oval | FALSE | FALSE |
| I3 0150 Unknown 16/06/2014 | 45 | 1 | 0 | 1 | FALSE | Stationary | FALSE | | FALSE | not applicable | oval | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0172 Unknown 21/06/2014 | 79 | 2 | 0 | 2 | FALSE | Complex activity | 3MF LH, LH P | | stencil below | FALSE | oval | FALSE | FALSE |
| I3 0172 Unknown 21/06/2014 | 80 | 1 | 1 | 2 | Kangaroo tracks | Tracking | FALSE | | FALSE | NP | Tube with lines eminating from the end | Tracks | FALSE |
| I3 0173 22/06/2014 | 15 | 2 | 0 | 2 | FALSE | Sexual intercourse | LH, LH P | | FALSE | TRUE | oval | FALSE | TRUE |
| I3 0173 22/06/2014 | 16 | 1 | 0 | 1 | FALSE | In motion (with weapons) | LH | | FALSE | FALSE | Hooked | FALSE | TRUE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0175 Unknown 22/06/2014 | 81 | 1 | 0 | 1 | FALSE | In motion (without weapons) | FALSE | | FALSE | not applicable | Fuzzy short | FALSE | FALSE |
| I3 0175 Unknown 22/06/2014 | 82 | 6 | 0 | 6 | FALSE | Complex activity | FALSE | | FALSE | FALSE | oval | FALSE | FALSE |
| I3 0175 Unknown 22/06/2014 | 83 | 2 | 0 | 2 | FALSE | Complex activity | FALSE | | FALSE | FALSE | oval | Dots emanating from Therianthrope mouth | FALSE |
| I3 0175 Unknown 22/06/2014 | 84 | 1 | 0 | 1 | FALSE | In motion (without weapons) | FALSE | | FALSE | not applicable | oval | FALSE | FALSE |
| I3 0181 Unknown 22/06/2014 | 94 | 1 | 0 | 1 | FALSE | In motion (with weapons) | FALSE | | FALSE | not applicable | Unique | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I3 0181 Unknown 22/06/2014 | 95 | 2 | 0 | 2 | FALSE | Stationary | FALSE | | FALSE | TRUE | oval, tassel | FALSE | below simple figures |
| I3 0183 Unknown 22/06/2014 | 46 | 4 | 0 | 4 | FALSE | In motion (with weapons) | FALSE | | FALSE | TRUE | tassel, circle with tassel, rectangle | FALSE | FALSE |
| I3 0183 Unknown 22/06/2014 | 47 | 1 | 0 | 1 | Kangaroo | Stationary | FALSE | | FALSE | not applicable | tassel | FALSE | FALSE |
| MO_80_PC129 | 96 | 1 | 0 | 1 | FALSE | In motion (with weapons) | FALSE | | FALSE | NP | NP | FALSE | FALSE |
| MO_80_PC129 | 97 | 2 | 0 | 2 | FALSE | In motion (with weapons) | LH | | FALSE | NP | NP | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R1 0009 M13 15/07/2013 | 69 | 3 | 0 | 3 | FALSE | In motion (with weapons) | FALSE | | FALSE | FALSE | oval | FALSE | FALSE |
| R1 0015 N13 15/07/2013 | 49 | 1 | 2 | 3 | FALSE | Complex activity | FALSE | | FALSE | NP | oval | FALSE | TRUE |
| R1 0021 O13 17/07/2013 | 28 | 1 | 0 | 1 | FALSE | In motion (without weapons) | FALSE | | FALSE | not applicable | tassel | FALSE | FALSE |
| R1 0021 O13 17/07/2013 | 29 | 1 | 0 | 1 | FALSE | In motion (with weapons) | FALSE | | FALSE | not applicable | oval | FALSE | FALSE |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R1 0037 Q13 22/06/2014 | 12 | 2 | 2 | 4 | FALSE | In motion (without weapons) | FALSE | | not applicable | FALSE | not applicable | FALSE | FALSE |

# Appendix 2: Regression analysis example

| Terms | Estimates(s.e) | Wald teststatistic | df | P-value |
|---|---|---|---|---|
| **Accepted** | | | | |
| **Combined arm(forward)** | 0.291(0.12) | 4.256 | 1 | <0.001 |
| **Combined leg(forward)** | 0.172(0.14) | 2.008 | 1 | 0.001 |
| **Rejected** | | | | |
| **Combined arm(backward)** | -0.005(0.15) | 0.001 | 1 | 0.101 |
| **Combined leg(backward)** | 0.096(0.129) | 0.556 | 1 | 0.974 |

# Regression analysis

Response variate: Groin_to_neck_body
Fitted terms: Constant, Combined_leg_forward, Combined_leg_backward, Combined_arm_forward, Combined_arm_backward

## Summary of analysis

| Source | d.f. | s.s. | m.s. | v.r. | F pr. |
|---|---|---|---|---|---|
| Regression | 4 | 1018.1 | 254.531 | 33.88 | <.001 |
| Residual | 64 | 480.8 | 7.513 | | |
| Total | 68 | 1498.9 | 22.043 | | |

Percentage variance accounted for 65.9
Standard error of observations is estimated to be 2.74.

*Message: the following units have large standardized residuals.*

| Unit | Response | Residual |
|---|---|---|
| 20 | 9.38 | -2.87 |

*Message: the following units have high leverage.*

| Unit | Response | Leverage |
|---|---|---|
| 42 | 17.97 | 0.243 |
| 53 | 17.19 | 0.192 |
| 72 | 16.23 | 0.288 |

## Estimates of parameters

| Parameter | estimate | s.e. | t(64) | t pr. |
|---|---|---|---|---|
| Constant | 1.566 | 0.996 | 1.57 | 0.121 |
| Combined_leg_forward | 0.172 | 0.121 | 1.42 | 0.161 |
| Combined_leg_backward | 0.096 | 0.129 | 0.75 | 0.459 |
| Combined_arm_forward | 0.291 | 0.141 | 2.06 | 0.043 |
| Combined_arm_backward | -0.005 | 0.150 | -0.03 | 0.974 |

## Accumulated analysis of variance

| Change | d.f. | s.s. | m.s. | v.r. | F pr. |
|---|---|---|---|---|---|
| + Combined_leg_forward | 1 | 912.692 | 912.692 | 121.49 | <.001 |
| + Combined_leg_backward | 1 | 20.840 | 20.840 | 2.77 | 0.101 |
| + Combined_arm_forward | 1 | 84.586 | 84.586 | 11.26 | 0.001 |

| | | | | | |
|---|---|---|---|---|---|
| + Combined_arm_backward | | | | | |
| | 1 | 0.008 | 0.008 | 0.00 | 0.974 |
| Residual | 64 | 480.810 | 7.513 | | |
| Total | 68 | 1498.935 | 22.043 | | |

895 RWALD

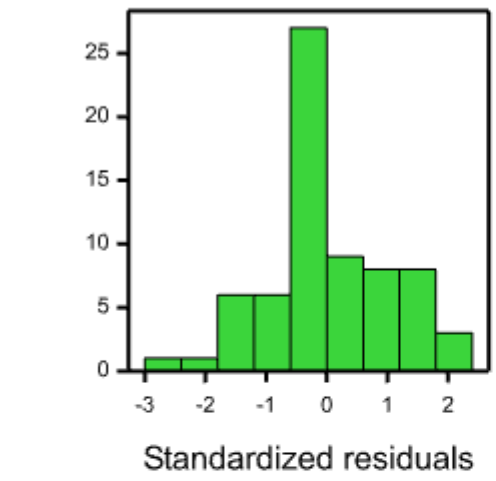
## Wald tests for dropping terms

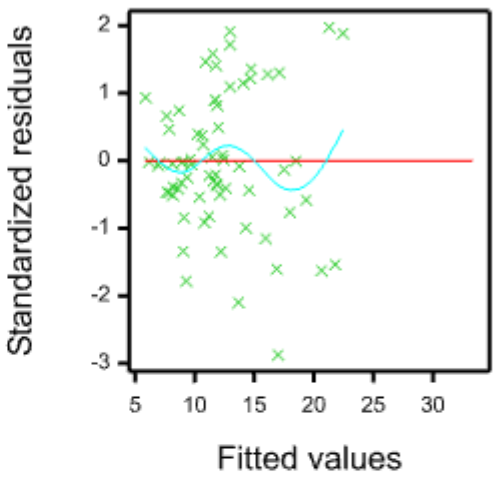
| Term | Wald statistic | d.f. | F statistic | F pr. |
|---|---|---|---|---|
| Combined_leg_forward | 2.008 | 1 | 2.01 | 0.161 |
| Combined_leg_backward | 0.556 | 1 | 0.56 | 0.459 |
| Combined_arm_forward | 4.256 | 1 | 4.26 | 0.043 |
| Combined_arm_backward | 0.001 | 1 | 0.00 | 0.974 |

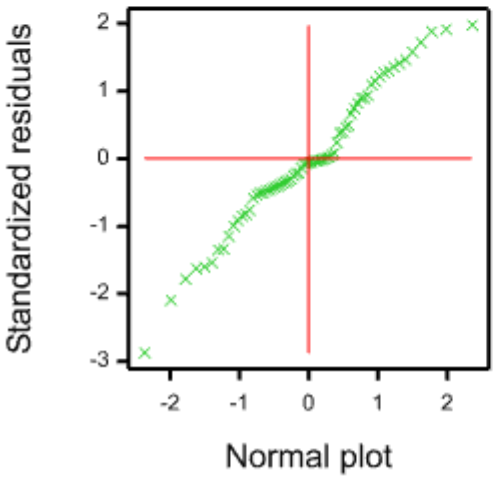
Residual d.f. 64

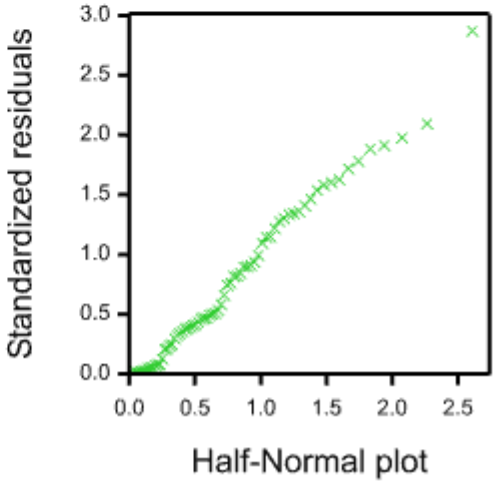
896 RCHECK [RMETHOD=deviance] residual; composite

# Groin_to_neck_body



# Appendix 3 Photographs of the recording process for the Mirarr Gunwarddebim project

*From left: Enoch, Jake Baird, Iain Johnston, Mark Djandjomerr, May* Nango *and John Hayward (Photograph M. Abbott).*

*From left: Mart Liddy, -, Jake Baird (Photograph M. Abbott).*

*From left: Mitchum Nango, Stephan Anderson, Jake Baird (Photograph M. Abbott).*

*Mark Djandjomerr (Photograph M. Abbott).*

*From left: Johnny Reed and John Hayward (Photograph M. Abbott).*

*Mark Djandjomerr (Photograph M. Abbott).*

*From left: Jake Baird, Enoch and Sally K. May (Photograph M. Abbott).*

*From left: Mark Djandjomerr, Iain Johnston, May* Nango, *John Hayward and Enoch (Photograph M. Abbott).*